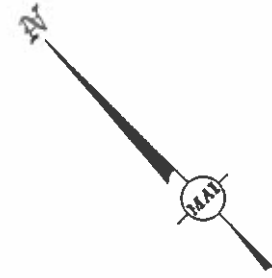


COPY



**KNOWLTON FARMS SOLAR DEVELOPMENT**  
**44 ESTABROOK AVENUE**  
**[PHASE THREE]**

**ASSESSOR'S MAP 49 – LOT 6**  
**–APPLICATION FOR SPECIAL PERMIT–**  
**–APPLICATION FOR SITE PLAN APPROVAL–**

PLANS AND DESIGN HAVE BEEN DEVELOPED IN ACCORDANCE WITH  
THE PERFORMANCE STANDARDS SET FORTH  
IN SECTION 4.1 OF THE GRAFTON ZONING BYLAW &  
ARTICLE 36: STORMWATER MANAGEMENT BYLAW



LOCATED IN  
**GRAFTON, MASSACHUSETTS**

DATE: JUNE 12, 2018  
REVISED: AUGUST 3, 2018

APPLICANT:

BLUEWAVE CAPITAL, LLC  
137 NEWBURY STREET, FOURTH FLOOR  
BOSTON, MASSACHUSETTS 02116

RECORD OWNERS:

KNOWLTON FARMS NOMINEE TRUST  
PATRICIA K. KNOWLTON, TRS.  
43 ESTABROOK AVENUE  
GRAFTON, MASSACHUSETTS 01519

**BLUEWAVE**

TEL: (617) 209-3122 FAX: (617) 209-2730  
WWW.BLUEWAVE-CAPITAL.COM

LAND SURVEYOR/SITE CIVIL ENGINEER:



**MERIDIAN ASSOCIATES**

500 CUMMINGS CENTER SUITE 500 69 MILK STREET, SUITE 302  
BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 671-7000  
WWW.MERIDIANASSOC.COM

ENVIRONMENTAL CONSULTANT:

**LEC**

LEC ENVIRONMENTAL CONSULTANTS, INC.  
100 GROVE STREET, SUITE 302  
WORCESTER, MA 01605  
TEL: (508) 753-3077 FAX: (508) 753-3177  
WWW.LECENVIRONMENTAL.COM

DRAWING INDEX:

SHEET 1	COVER SHEET & LOCUS CONTEXT MAP
SHEET 2	RECORD CONDITIONS PLAN
SHEET 3	PERMIT SITE PLAN OF LAND (DUAL-USE)
SHEET 4	PERMIT SITE PLAN OF LAND (CONVENTIONAL)
SHEET 5	GRADING AND DRAINAGE PLAN
SHEET 6	GRADING AND DRAINAGE PLAN
SHEET 7	GRADING AND DRAINAGE PLAN
SHEET 8	SEDIMENT AND EROSION CONTROL PLAN
SHEET 9	SEDIMENT AND EROSION CONTROL PLAN
SHEET 10	SEDIMENT AND EROSION CONTROL PLAN
SHEET 11	WETLAND CROSSING AND REPLICATION DETAILS
SHEET 12	SEDIMENTATION BASIN GRADING DETAILS
SHEET 13	SEDIMENT AND EROSION CONTROL DETAILS
SHEET 14	SITE DETAILS

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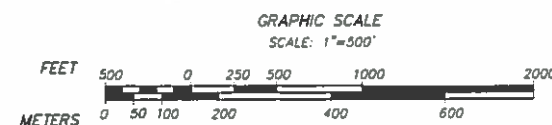
AUG 7 2018

PLANNING BOARD  
GRAFTON, MA

APPROVED BY:  
GRAFTON PLANNING BOARD

EXHIBIT 17

LOCUS CONTEXT MAP:



PROJECT SUMMARY:

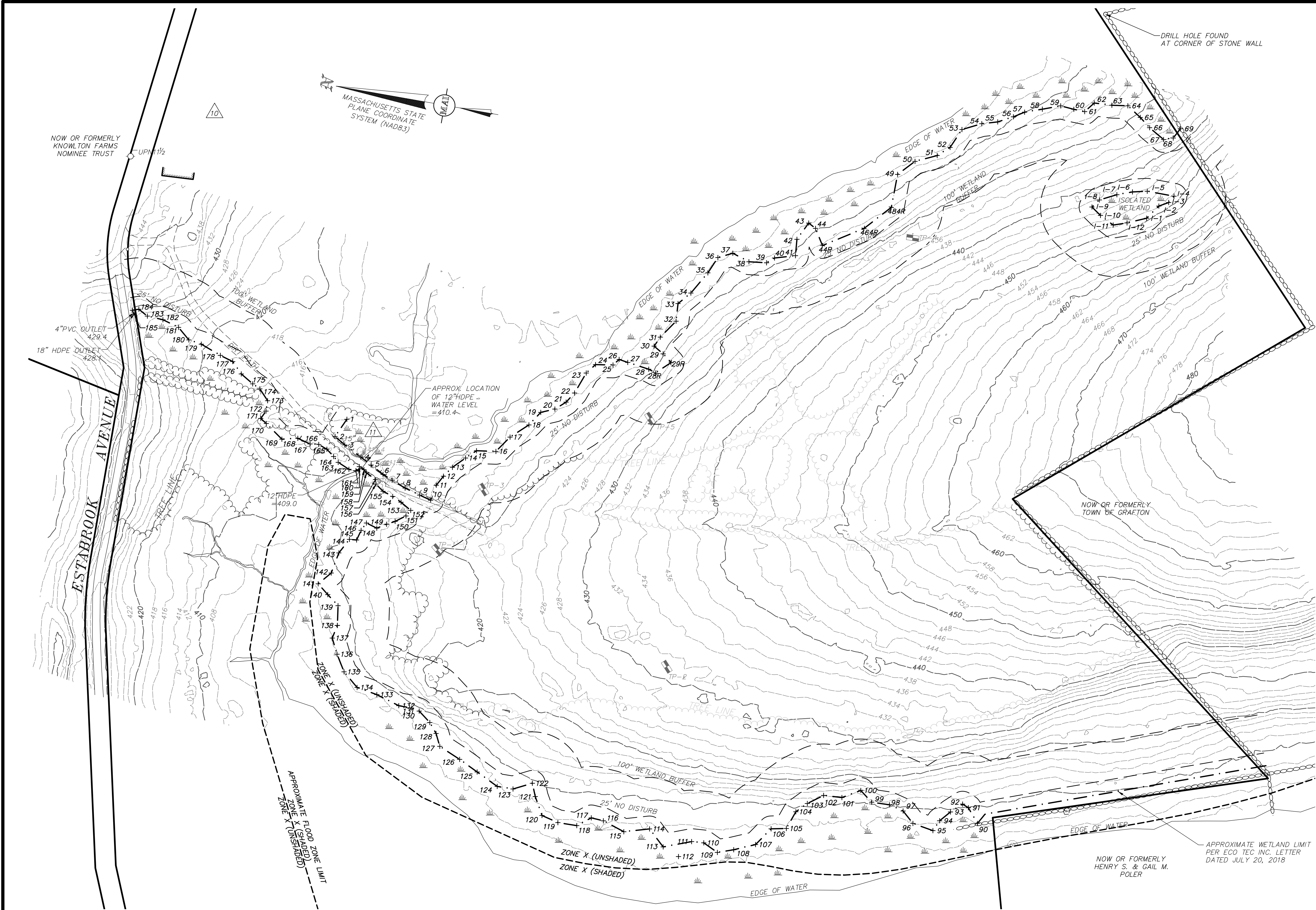
THE PROJECT PROPOSES THE INSTALLATION OF 402 SOLAR PANEL TABLES CONTAINING A TOTAL OF 840 MODULES. THE SOLAR PANELS WILL BE INSTALLED AS AN ELEVATED CANOPY THAT WILL ALLOW AGRICULTURAL ACTIVITIES, NAMELY, A COMBINATION OF LIGHT LIVESTOCK AND FOOD CROPS TO CONTINUE UNIMPEDED UNDER THE ARRAY (I.E. "DUAL-USE"). THE SOLAR ENERGY FACILITY WILL PRODUCE APPROXIMATELY 3.11 MEGAWATTS DC (MWDC) OF POWER, AND 2.8 MEGAWATTS AC (MWAC) OF POWER.

I, \_\_\_\_\_, CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

"THIS PLAN IS SUBJECT TO A SPECIAL PERMIT DATED \_\_\_\_\_"  
"THIS PLAN IS SUBJECT TO SITE PLAN APPROVAL DATED \_\_\_\_\_"  
"THIS PLAN IS SUBJECT TO A CERTIFICATE OF OF GOOD STANDING DATED JUNE 5, 2018"







SCHEDULE OF DIMENSIONAL CONTROLS

ZONING DISTRICT: RESIDENTIAL (R40)

REQUIREMENT	REQUIRED	PROPOSED
LOT AREA:	40,000 SF.	7,196,902 SF.
FRONTAGE:	140 FT.	6,176 FT.
FRONT YARD:	30 FT.	31± FT. (EX. DWELLING)
SIDE YARD:	15 FT.	>2,000 FT. (EX. DWELLING)
REAR YARD:	15 FT.	166± FT. (SOLAR PANELS)
BUILDING LOT COVERAGE:	30%	0.1%
MAXIMUM BUILDING HEIGHT:	35 FT.	<35 FT. (EX. DWELLING)

SITE FEATURES

XX	TWO FOOT CONTOUR
XX	FIVE FOOT CONTOUR
---	TREELINE
---	STONEWALL
---	BORDERING VEGETATED WETLANDS
+	WETLAND FLAG
+	LIMIT OF BUFFER ZONE

TEMPORARY BENCHMARK CHART

T.B.M.#	DESCRIPTION	ELEVATION
10	CUT SPIKE IN UTILITY POLE #11 1.5' A.G.	453.08
11	CUT SPIKE IN 15" CONIFEROUS TREE, 1.0' A.G.	413.32

(SEE NOTE 6)

NOTES:

- THE TOPOGRAPHY, SITE DETAIL & SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM AN AERIAL LIDAR SURVEY CONDUCTED BY MERIDIAN ASSOCIATES, INC. (MAI) ON APRIL 23, 2018 AND SUPPLEMENTED WITH AN ON-THE-GROUND SURVEY CONDUCTED ON JUNE 5, 2018.
- THE SUBJECT PROPERTY IS LOCATED IN THE LOW DENSITY RESIDENTIAL (R-40) ZONING DISTRICT.
- THE SUBJECT PROPERTY IS DEPICTED AS PARCEL ID 110/049.0-0000-0006.0 ON TOWN OF GRAFTON ONLINE ASSESSOR'S DATABASE.
- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED UPON A PARTIAL FIELD SURVEY AND COMPILED PLANS OF RECORD. MERIDIAN ASSOCIATES, INC. DOES NOT WARRANTY NOR GUARANTEE THE LOCATION OF ALL UTILITIES DEPICTED OR NOT DEPICTED. THE CONTRACTOR, PRIOR TO COMMENCEMENT OF CONSTRUCTION, SHALL VERIFY THE LOCATION OF ALL UTILITIES AND CONTACT DIG SAFE AT 1-888-344-7233.
- THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT, VISIBLE USES OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
- THE ELEVATIONS DEPICTED HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- PROPERTY LINES DEPICTED HEREON ARE BASED ON COMPILED DEEDS AND PLANS OF RECORD. THIS PLAN IS NOT TO BE USED FOR THE RECONSTRUCTION OF BOUNDARY LINES OR FOR TITLE INSURANCE PURPOSES. ALL BOUNDARY LINES DEPICTED ARE APPROXIMATE ONLY. MAI DID NOT PERFORM A BOUNDARY RETRACEMENT SURVEY.
- THE WETLAND FLAGS DEPICTED WERE DEMARCATED BY LEC ENVIRONMENTAL CONSULTANTS, INC. ON APRIL 2 & 3, 2018.
- THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AND FLOOD ZONE X (SHADED), MODERATE RISK AREAS WITHIN THE 0.2% CHANCE FLOODPLAIN, AREAS OF 1% ANNUAL CHANCE FLOODING WHERE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF THE 1% ANNUAL CHANCE FLOOD WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED FROM THE 1% ANNUAL CHANCE FLOOD BY A LEVEE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 25027C0831E DATED JULY 4, 2011.
- THE SUBJECT SITE IS LOCATED WITHIN THE MISCUE, WARREN AND WHITEHALL WATERSHEDS AREA OF CRITICAL AND ENVIRONMENTAL CONCERN AS DESIGNATED BY THE MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION.
- THE EXISTING SITE IS COMPRISED OF WOODLAND AND AGRICULTURAL FIELDS AND IS PRESENTLY USED FOR AGRICULTURAL PURPOSES.

ALL UNDERGROUND UTILITY DATA REPRESENTS RECORD INFORMATION RECOVERED THROUGH RESEARCH WITHOUT SURFACE DEMARCATION NOR SUBSURFACE VERIFICATION.

RECORD OWNER:

KNOWLTON FARMS NOMINEE TRUST  
LEEROY E. KNOWLTON, TRUSTEE  
43 ESTABROOK AVENUE  
GRAFTON, MASSACHUSETTS 01519  
- DEED BOOK 35401 PAGE 337

UNOFFICIAL SOILS INFORMATION

DATE: MAY 21, 2018  
CONDUCTED BY: ANDREW RODRIGUEZ, SE (13890)

TEST PIT IP-1  
ELEV.=420±  
ASSUMED E.S.H.G.W. ELEV.=NONE

0"-9" A HORIZON: SANDY LOAM  
9"-31" B HORIZON: FINE SANDY LOAM  
31"-80" LAYER C: GRAVELLY SANDY LOAM WITH COBBLES AND BOULDERS

REDOX NOT OBSERVED  
WEEDING NOT OBSERVED

TEST PIT IP-2  
ELEV.=431±  
ASSUMED E.S.H.G.W. ELEV.=428.5

0"-4" A HORIZON: SANDY LOAM  
4"-12" B HORIZON: FINE SANDY LOAM  
12"-96" LAYER C: GRAVELLY SANDY LOAM WITH COBBLES

REDOX OBSERVED @ 30"  
WEEDING OBSERVED @ 60"  
STANDING WATER OBSERVED @ 96"

TEST PIT IP-3  
ELEV.=416±  
ASSUMED E.S.H.G.W. ELEV.=413.66

0"-8" A HORIZON: FINE SANDY LOAM  
8"-20" B HORIZON: FINE SANDY LOAM  
20"-80" LAYER C: GRAVELLY SANDY LOAM WITH COBBLES AND BOULDERS

REDOX OBSERVED @ 28"  
WEEDING OBSERVED @ 74"  
STANDING WATER OBSERVED @ 80"

TEST PIT IP-4  
ELEV.=433±  
ASSUMED E.S.H.G.W. ELEV.=425

0"-6" A HORIZON: SANDY LOAM  
6"-21" B HORIZON: FINE SANDY LOAM  
21"-100" LAYER C: GRAVELLY SANDY LOAM WITH COBBLES

REDOX NOT OBSERVED  
WEEDING OBSERVED @ 96"

TEST PIT IP-5  
ELEV.=428±  
ASSUMED E.S.H.G.W. ELEV.=NONE

0"-9" A HORIZON: FINE SANDY LOAM  
9"-22" B HORIZON: FINE SANDY LOAM  
22"-55" LAYER C: GRAVELLY SANDY LOAM  
55"-90" LAYER C2: GRAVELLY SANDY LOAM WITH COBBLES AND BOULDERS

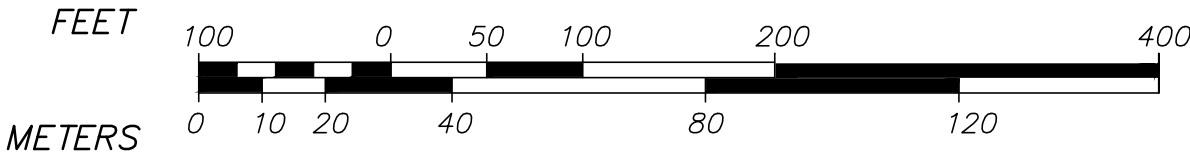
REDOX NOT OBSERVED  
WEEDING NOT OBSERVED

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

APPROVED BY:  
GRAFTON PLANNING BOARD

GRAPHIC SCALE  
SCALE: 1"=100'



I, \_\_\_\_\_ CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

DATE:

TOWN CLERK

DATE

44 ESTABROOK AVENUE

RECORD CONDITIONS PLAN OF LAND  
LOCATED IN  
GRAFTON, MASSACHUSETTS  
(WORCESTER COUNTY)

PREPARED FOR  
BLUEWAVE CAPITAL, LLC  
SCALE: 1"= 100' DATE: JUNE 12, 2018



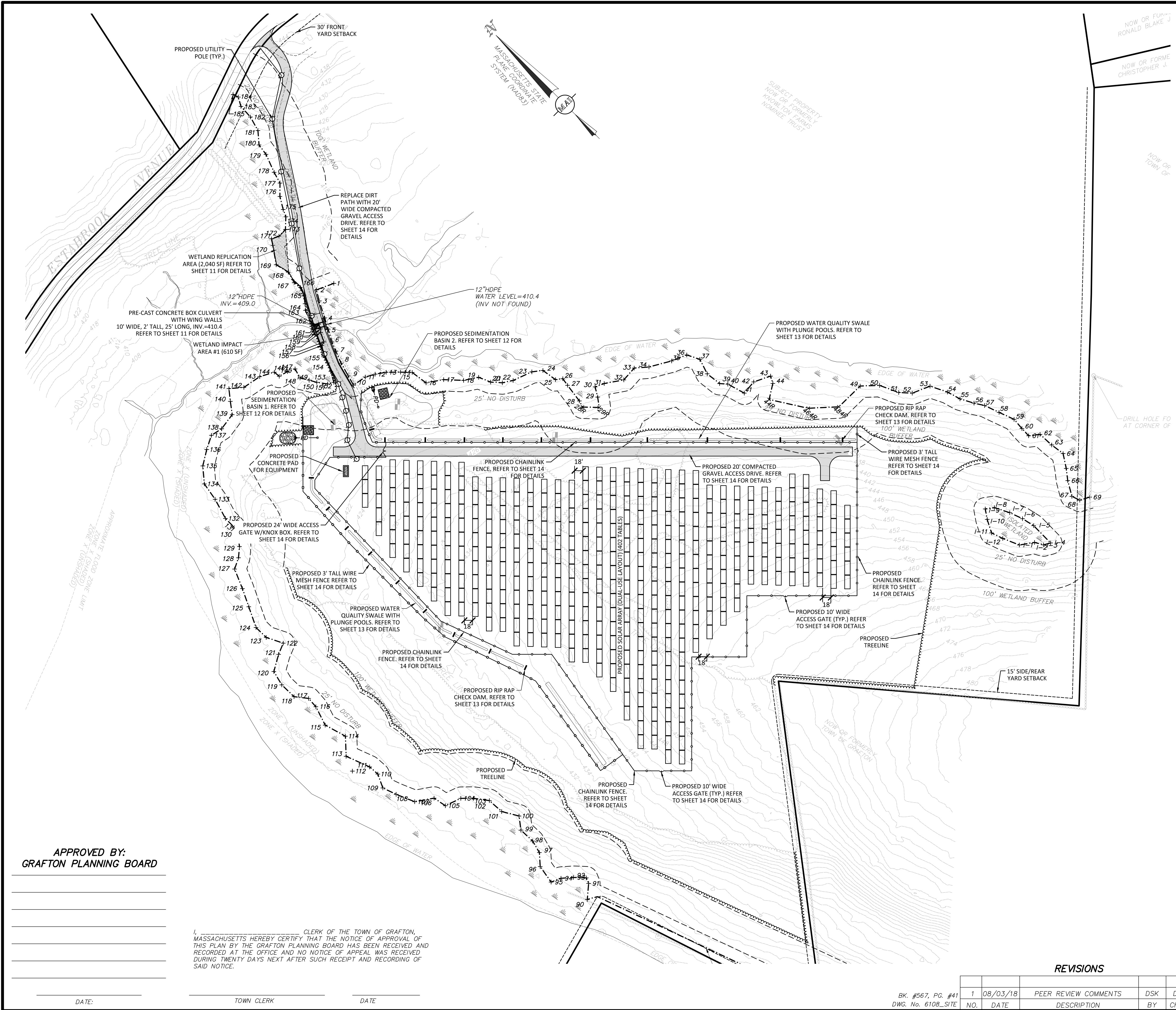
MERIDIAN ASSOCIATES

500 CUMMINGS CENTER, SUITE 5950 69 MILK STREET, SUITE 302  
BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
WWW.MERIDIANASSOC.COM

SHEET No. 2 OF 14

PROJECT No. 6108





THE PROPOSED ACCESS PATHS SHALL BE VEGETATED USING "NEW ENGLAND CONSERVATIONS/WILDLIFE MIX", OR APPROVED EQUAL, AND IS INTENDED TO PROVIDE A LEVEL PATH OF TRAVEL FOR MAINTENANCE VEHICLES

FOR PERMITTING ONLY NOT FOR CONSTRUCTION	SEE SHEET 2 OF 12 FOR GENERAL NOTES AND LEGEND
MODULES	DC POWER
7,236	2.9±MW

**NOTES:**

- THE PROPOSED PROJECT WILL CONSIST OF A LARGE SCALE GROUND MOUNTED SOLAR FARM WITH AGRICULTURAL USES I.E. "DUAL-USE".
- THE PROPOSED PROJECT DOES NOT INCLUDE IMPERVIOUS AREAS OTHER THAN THE 150 SF CONCRETE PAD FOR THE ELECTRICAL EQUIPMENT. THE SITE IS PRESENTLY OPEN SPACE, AND WILL REMAIN AS OPEN SPACE WITH GROUND MOUNTED SOLAR PANELS.
- THERE IS NO PROPOSED PARKING AS THE SITE WILL ONLY BE ACCESSED FOR MAINTENANCE AND REPAIRS TO THE SOLAR PANELS AND EQUIPMENT. THERE WILL NOT BE PERSONAL ONSITE ON A REGULAR BASIS.
- THE SOLAR PANEL TABLES ARE TO BE LAID OUT AS TO PROVIDE EIGHTEEN (18) FEET OF CLEAR SPACE BETWEEN EACH ROW.
- THERE IS TO BE NO PARKING ALONG ESTABROOK AVENUE DURING THE CONSTRUCTION OF THE PROJECT.
- REFER TO EROSION CONTROL PLAN FOR ADDITIONAL NOTES REGARDING CONSTRUCTION SEQUENCING.

**LEGEND:**

- 6-46 TWO FOOT CONTOUR
- 7-10 TEN FOOT CONTOUR
- BITUMINOUS BERM
- GRANITE CURB
- CONCRETE CURB
- TREELINE
- SCRUB LINE
- STEEL GUARDRAIL
- WIRE FENCE REMAINS
- STONEWALL
- EXPOSED ROCK OUTCROP
- SPOIL PILE
- SIGN
- WITNESS POST
- SHRUB
- TREE
- BORDERING VEGETATED WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- OVERHEAD WIRES
- ELECTRIC LINE
- UTILITY POLE
- GUY WIRE
- ELECTRIC BOX
- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BITUMINOUS BERM
- BIT. CONC.
- CONC.
- EDGE OF PAVEMENT
- GC
- GRANITE CURB
- UGE
- UNDERGROUND ELECTRIC

**PROPOSED LEGEND:**

- PROPOSED TREELINE
- PROPOSED CONTOUR
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PROPOSED UNDERGROUND ELECTRIC LINE
- POHW
- PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

GRAPHIC SCALE  
SCALE: 1"=100'

FEET 0 100 0 50 100 200 400  
METERS 0 10 20 40 80 120

**44 ESTABROOK AVENUE**  
**PERMIT SITE PLAN OF LAND (DUAL-USE)**  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
SCALE: 1"= 100' DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**  
500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
WWW.MERIDIANASSOC.COM

SHEET No. 3 OF 14 PROJECT No. 6108

**APPROVED BY:**  
**GRAFTON PLANNING BOARD**

DATE: \_\_\_\_\_ TOWN CLERK \_\_\_\_\_ DATE \_\_\_\_\_

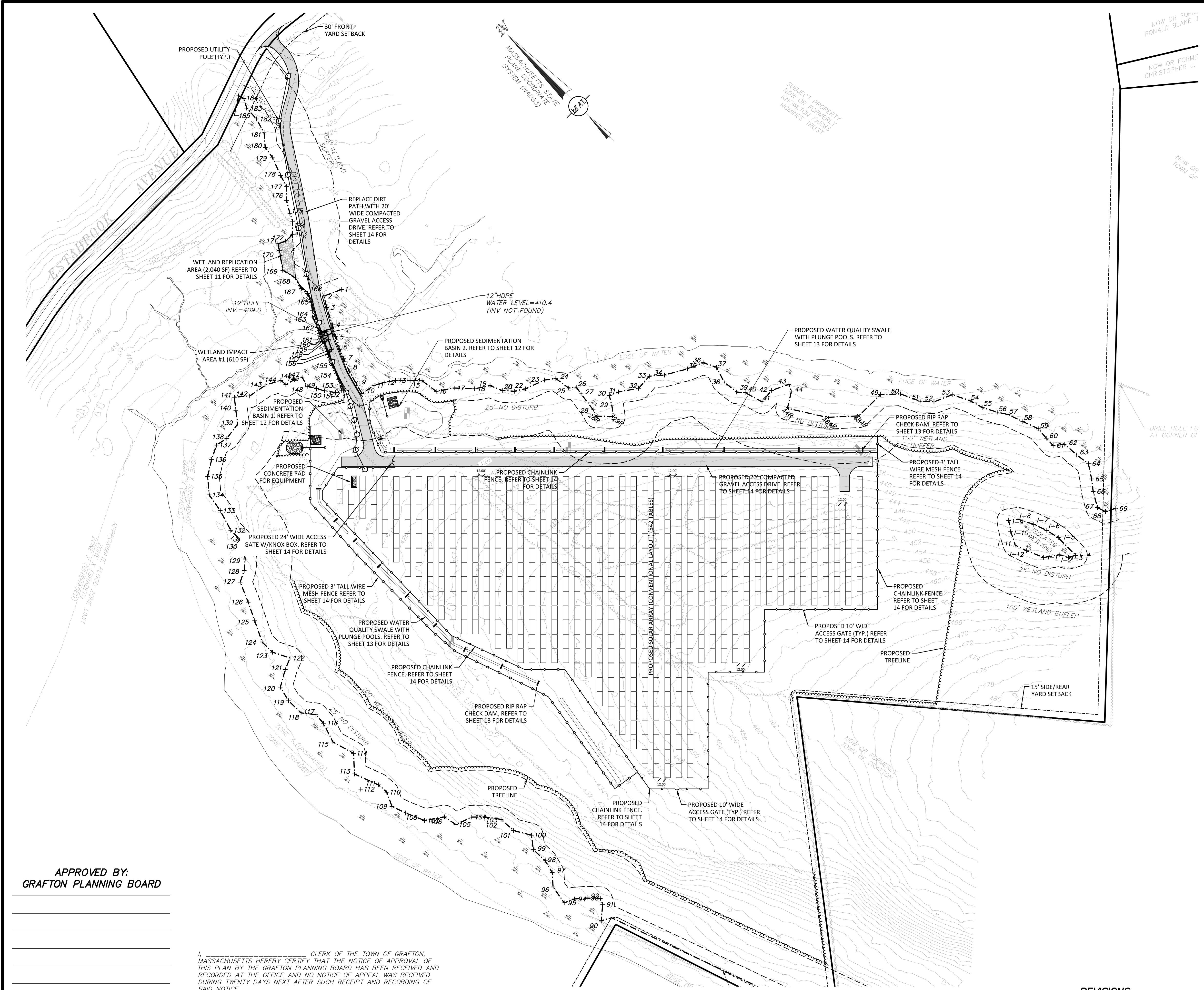
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**REVISIONS**

1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK
NO.	DATE	DESCRIPTION	BY	CHK'D

BK. #567, PG. #41  
DWG. No. 6108\_SITE





THE PROPOSED ACCESS PATHS SHALL BE VEGETATED USING "NEW ENGLAND CONSERVATIONS/WILDLIFE MIX", OR APPROVED EQUAL, AND IS INTENDED TO PROVIDE A LEVEL PATH OF TRAVEL FOR MAINTENANCE VEHICLES

FOR PERMITTING ONLY NOT FOR CONSTRUCTION	SEE SHEET 2 OF 12 FOR GENERAL NOTES AND LEGEND
MODULES	DC POWER
9,756	3.9±MW

**NOTES:**

- THE PROPOSED PROJECT WILL CONSIST OF A LARGE SCALE GROUND MOUNTED SOLAR FARM WITH A CONVENTIONAL LAYOUT.
- THE PROPOSED PROJECT DOES NOT INCLUDE IMPERVIOUS AREAS OTHER THAN THE 150 SF CONCRETE PAD FOR THE ELECTRICAL EQUIPMENT. THE SITE IS PRESENTLY OPEN SPACE, AND WILL REMAIN AS OPEN SPACE WITH GROUND MOUNTED SOLAR PANELS.
- THERE IS NO PROPOSED PARKING AS THE SITE WILL ONLY BE ACCESSED FOR MAINTENANCE AND REPAIRS TO THE SOLAR PANELS AND EQUIPMENT. THERE WILL NOT BE PERSONAL ONSITE ON A REGULAR BASIS.
- THE SOLAR PANEL TABLES ARE TO BE LAID OUT AS TO PROVIDE TWELVE (12) FEET OF CLEAR SPACE BETWEEN EACH ROW.
- THE PURPOSE OF THIS PLAN IS TO DEPICT WHAT A CONVENTIONAL SOLAR ARRAY WOULD LOOK LIKE SHOULD THE "DUAL-USE" LAYOUT NOT BE UTILIZED.

**LEGEND:**

- 6-46 TWO FOOT CONTOUR
- 7-10 TEN FOOT CONTOUR
- BITUMINOUS BERM
- GRANITE CURB
- CONCRETE CURB
- TREELINE
- SCRUB LINE
- STEEL GUARDRAIL
- WIRE FENCE REMAINS
- STONEWALL
- EXPOSED ROCK OUTCROP
- SPOIL PILE
- SIGN
- WITNESS POST
- SHRUB
- TREE
- BORDERING VEGETATED WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- OVERHEAD WIRES
- OHW
- ELECTRIC LINE
- UTILITY POLE
- GUY WIRE
- ELECTRIC BOX
- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BITUMINOUS BERM
- BIT. CONC.
- CONC.
- CONCRETE CURB
- EDGE OF PAVEMENT
- GC
- GRANITE CURB
- UGE
- UNDERGROUND ELECTRIC

**PROPOSED LEGEND:**

- PROPOSED TREELINE
- PROPOSED CONTOUR
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PE
- POHW
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

GRAPHIC SCALE  
SCALE: 1"=100'

FEET 0 100 0 50 100 200 400  
METERS 0 10 20 40 80 120

**APPROVED BY:**  
**GRAFTON PLANNING BOARD**

DATE: \_\_\_\_\_ TOWN CLERK \_\_\_\_\_ DATE \_\_\_\_\_

CLERK OF THE TOWN OF GRAFTON,  
MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF  
THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND  
RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED  
DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF  
SAID NOTICE.

**REVISIONS**

1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK
NO.	DATE	DESCRIPTION	BY	CHK'D

BK. #567, PG. #41  
DWG. No. 6108\_SITE

**44 ESTABROOK AVENUE**  
**PERMIT SITE PLAN OF LAND (CONVENTIONAL)**  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

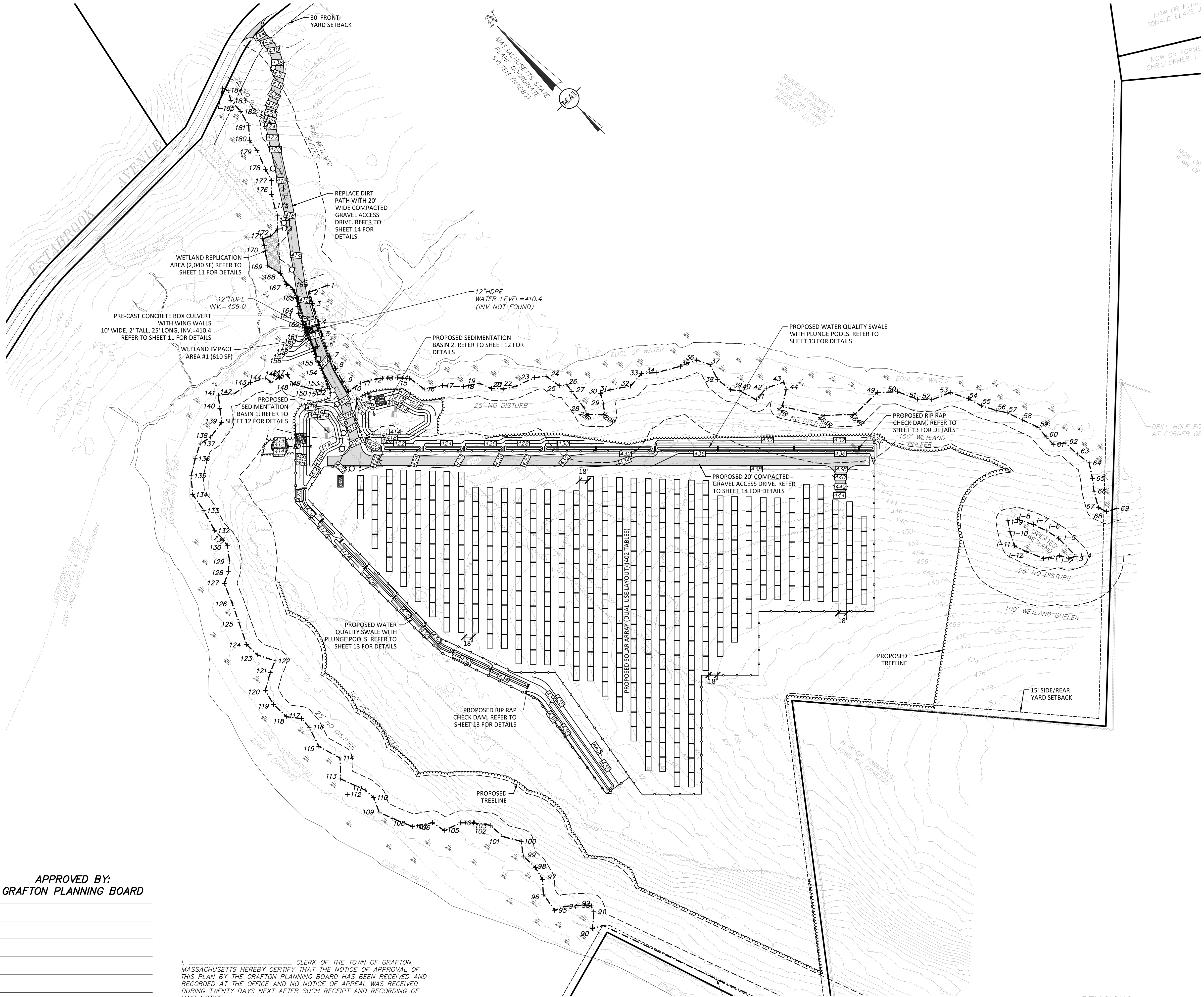
PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
SCALE: 1"= 100' DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**  
500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
WWW.MERIDIANASSOC.COM

SHEET No. 4 OF 14 PROJECT No. 6108

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FOR PERMITTING ONLY  
NOT FOR CONSTRUCTION

SEE SHEET 2 OF 12 FOR  
GENERAL NOTES AND LEGEND

MODULES	DC POWER
7,236	2.9±MW

**NOTES:**  
1. IT IS ANTICIPATED THAT LESS THAN 1,000 CUBIC YARDS OF MATERIAL WILL NEED TO BE REMOVED FROM THE SITE, EXCLUDING VEGETATION NEEDED TO BE REMOVED AS A PART OF THE PROPOSED PROJECT.

**LEGEND:**

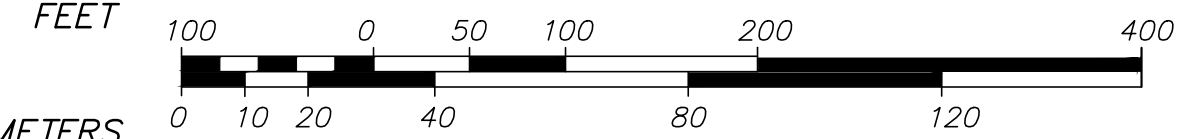
- 646 TWO FOOT CONTOUR
- 710 TEN FOOT CONTOUR
- BITUMINOUS BERM
- GRANITE CURB
- CONCRETE CURB
- TREELINE
- SCRUB LINE
- STEEL GUARDRAIL
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- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BITUMINOUS BERM
- BIT. CONC.
- CONCRETE CURB
- EDGE OF PAVEMENT
- GC
- UNDERGROUND ELECTRIC

**PROPOSED LEGEND:**

- PROPOSED TREELINE
- PROPOSED CONTOUR
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

**GRAPHIC SCALE**

SCALE: 1"=100'



APPROVED BY:  
GRAFTON PLANNING BOARD

DATE: \_\_\_\_\_

CLERK OF THE TOWN OF GRAFTON,  
MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF  
THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND  
RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED  
DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF  
SAID NOTICE.

TOWN CLERK

DATE

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

BK. #567, PG. #41  
DWG. No. 6108\_SITE

**44 ESTABROOK AVENUE**

GRADING AND DRAINAGE PLAN  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

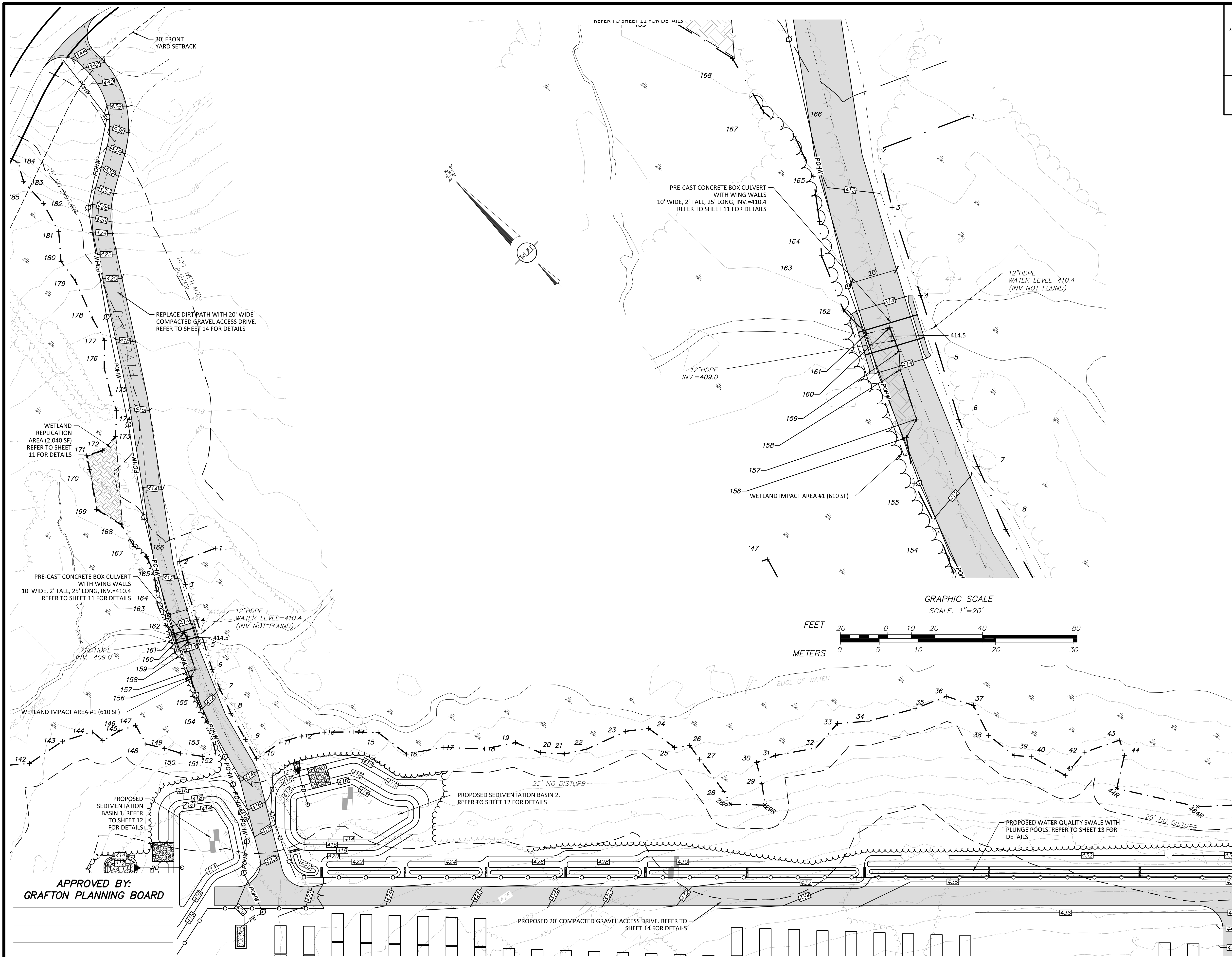
PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
SCALE: 1"= 100' DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**

500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
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SHEET No. 5 OF 14 PROJECT No. 6108





THE PROPOSED ACCESS PATHS SHALL BE VEGETATED USING "NEW ENGLAND CONSERVATIONS/WILDLIFE MIX" OR APPROVED EQUAL, AND IS INTENDED TO PROVIDE A LEVEL PATH OF TRAVEL FOR MAINTENANCE VEHICLES

FOR PERMITTING ONLY  
NOT FOR CONSTRUCTION

SEE SHEET 2 OF 12 FOR  
GENERAL NOTES AND LEGEND

MODULES	DC POWER
7,236	2.9±MW

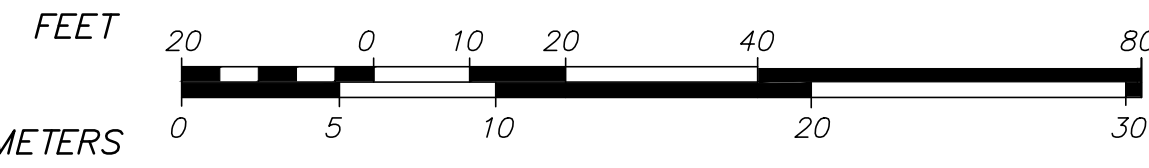
LEGEND:

- 6.46 TWO FOOT CONTOUR
- 7.10 TEN FOOT CONTOUR
- BITUMINOUS BERM
- GRANITE CURB
- CONCRETE CURB
- TREELINE
- SCRUB LINE
- STEEL GUARDRAIL
- WIRE FENCE REMAINS
- STONEWALL
- EXPOSED ROCK OUTCROP
- SPOIL PILE
- SIGN
- WITNESS POST
- SHRUB
- TREE
- BORDERING VEGETATED WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- OVERHEAD WIRES
- OHW
- ELECTRIC LINE
- UTILITY POLE
- GUY WIRE
- ELECTRIC BOX
- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BITUMINOUS BERM
- BIT. CONC.
- CC
- EOP
- GC
- UGE

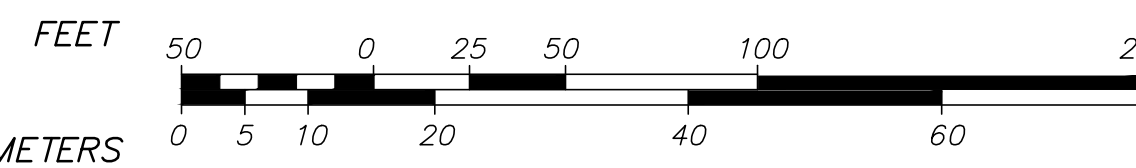
PROPOSED LEGEND:

- PROPOSED TREELINE
- PROPOSED CONTOUR
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PE
- POHW
- PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

GRAPHIC SCALE  
SCALE: 1"=20'



GRAPHIC SCALE  
SCALE: 1"=50'



44 ESTABROOK AVENUE  
GRADING AND DRAINAGE PLAN  
LOCATED IN  
GRAFTON, MASSACHUSETTS  
(WORCESTER COUNTY)

PREPARED FOR  
BLUEWAVE CAPITAL, LLC  
SCALE: AS NOTED DATE: JUNE 12, 2018



500 CUMMINGS CENTER, SUITE 5950 69 MILK STREET, SUITE 302  
BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
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SHEET No. 6 OF 14 PROJECT No. 6108

REVISIONS

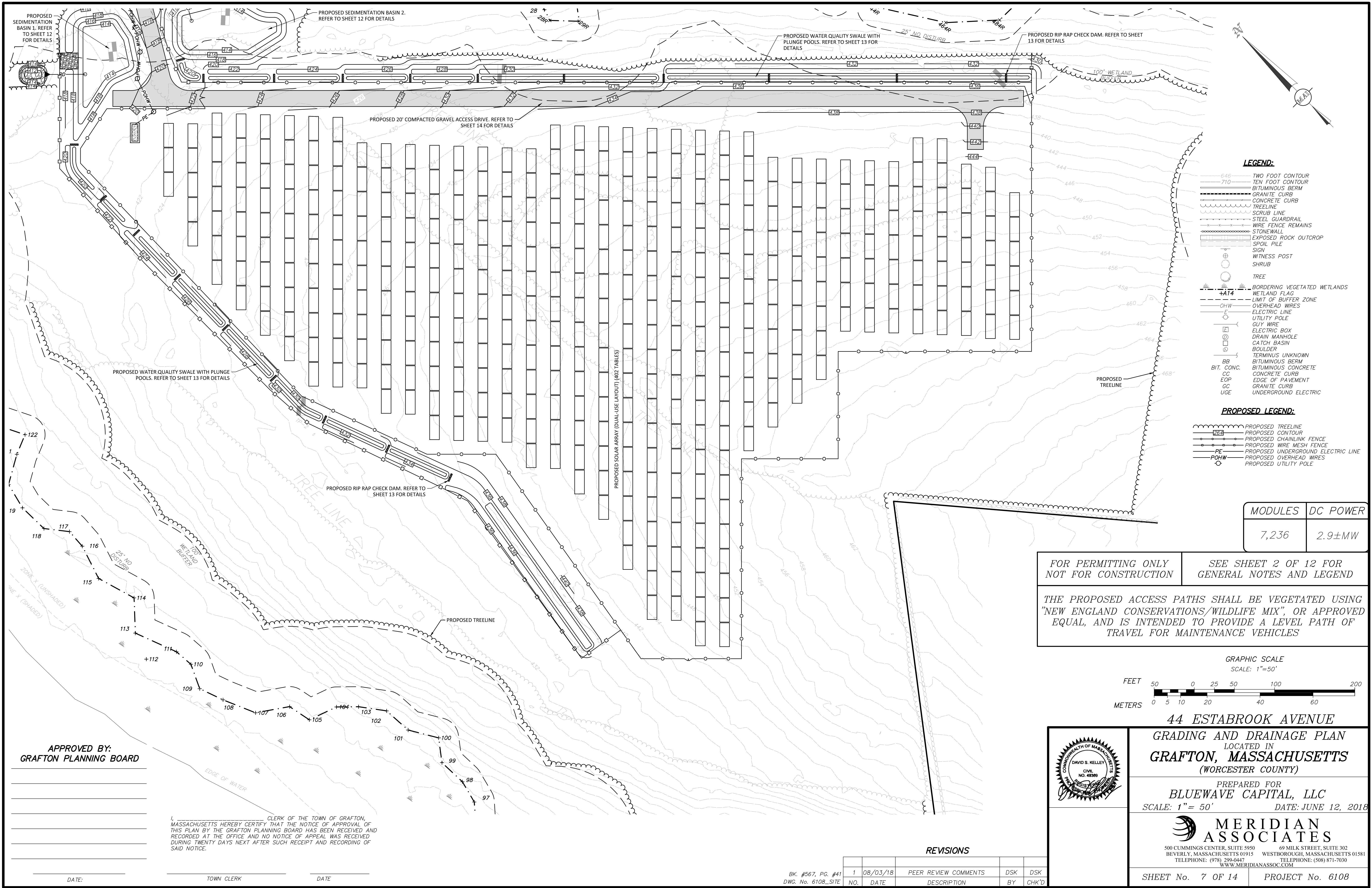
NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

I, \_\_\_\_\_ CLERK OF THE TOWN OF GRAFTON,  
MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF  
THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND  
RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED  
DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF  
SAID NOTICE.

DATE: \_\_\_\_\_ TOWN CLERK \_\_\_\_\_ DATE: \_\_\_\_\_

BK. #567, PG. #41  
DWG. No. 6108\_SITE





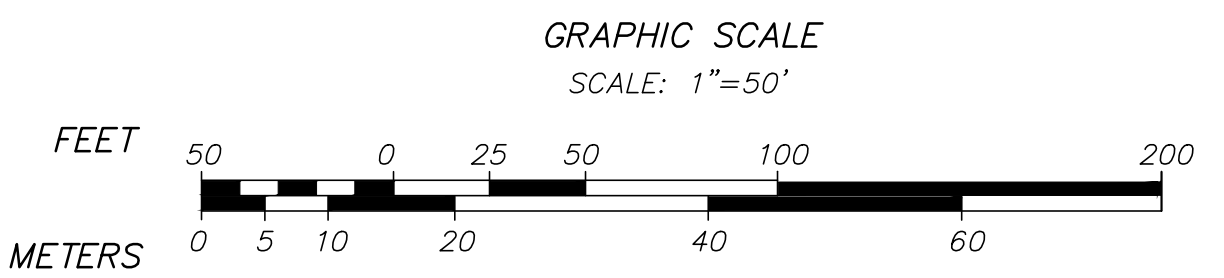
- LEGEND:**
- TWO FOOT CONTOUR
  - TEN FOOT CONTOUR
  - BITUMINOUS BERM
  - GRANITE CURB
  - CONCRETE CURB
  - TREELINE
  - SCRUB LINE
  - STEEL GUARDRAIL
  - WIRE FENCE REMAINS
  - STONEWALL
  - EXPOSED ROCK OUTCROP
  - SIGN
  - WITNESS POST
  - SHRUB
  - TREE
  - BORDERING VEGETATED WETLANDS
  - WETLAND FLAG
  - LIMIT OF BUFFER ZONE
  - OVERHEAD WIRES
  - ELECTRIC LINE
  - UTILITY POLE
  - GUY WIRE
  - ELECTRIC BOX
  - DRAIN MANHOLE
  - CATCH BASIN
  - BOULDER
  - TERMINUS UNKNOWN
  - BITUMINOUS BERM
  - BIT. CONC.
  - CC
  - EOP
  - GC
  - UGE
- PROPOSED LEGEND:**
- PROPOSED TREELINE
  - PROPOSED CONTOUR
  - PROPOSED CHAINLINK FENCE
  - PROPOSED WIRE MESH FENCE
  - PROPOSED UNDERGROUND ELECTRIC LINE
  - POHW
  - PROPOSED OVERHEAD WIRES
  - PROPOSED UTILITY POLE

MODULES	DC POWER
7,236	2.9±MW

FOR PERMITTING ONLY  
NOT FOR CONSTRUCTION

SEE SHEET 2 OF 12 FOR  
GENERAL NOTES AND LEGEND

THE PROPOSED ACCESS PATHS SHALL BE VEGETATED USING  
"NEW ENGLAND CONSERVATIONS/WILDLIFE MIX", OR APPROVED  
EQUAL, AND IS INTENDED TO PROVIDE A LEVEL PATH OF  
TRAVEL FOR MAINTENANCE VEHICLES



APPROVED BY:  
GRAFTON PLANNING BOARD

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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SAID NOTICE.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

44 ESTABROOK AVENUE

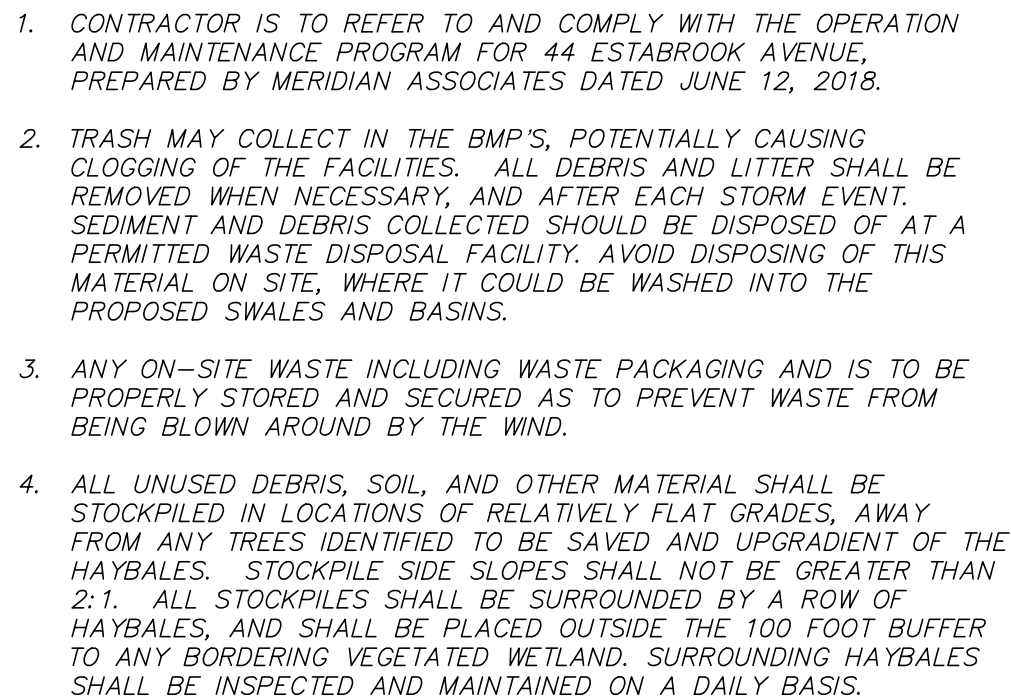
GRADING AND DRAINAGE PLAN  
LOCATED IN  
GRAFTON, MASSACHUSETTS  
(WORCESTER COUNTY)

PREPARED FOR  
BLUEWAVE CAPITAL, LLC  
SCALE: 1" = 50' DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**  
500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
TELEPHONE: (978) 299-0447 WWW.MERIDIANASSOC.COM  
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (508) 871-7030

SHEET No. 7 OF 14 PROJECT No. 6108





DWG FILE: 6108\_SITE.dwg 9:41am PLOTTED: Aug 06, 2018 dkelley



THE PROPOSED ACCESS PATHS SHALL BE VEGETATED USING "NEW ENGLAND CONSERVATIONS/WILDLIFE MIX", OR APPROVED EQUAL, AND IS INTENDED TO PROVIDE A LEVEL PATH OF TRAVEL FOR MAINTENANCE VEHICLES

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NOT FOR CONSTRUCTION

SEE SHEET 2 OF 12 FOR  
GENERAL NOTES AND LEGEND

MODULES	DC POWER
7,236	2.9±MW

**EROSION CONTROL LEGEND:**

- PROPOSED HAYBALES & SILT FENCE
- NEW ENGLAND CONSERVATION/WILDLIFE MIX PLANTING AREA
- RIPRAP AREA
- PROPOSED SILT FENCE
- PROPOSED FILTERMITT

**LEGEND:**

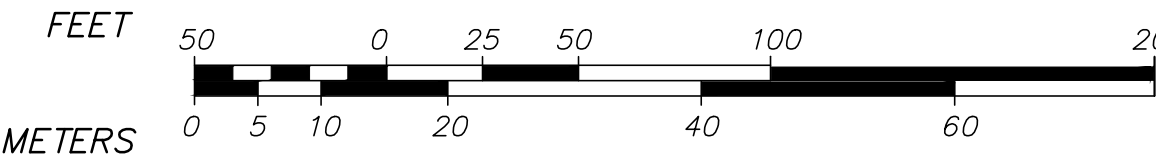
- TWO FOOT CONTOUR
- TEN FOOT CONTOUR
- BITUMINOUS BERM
- GRANITE CURB
- CONCRETE CURB
- TREELINE
- SCRUB LINE
- STEEL GUARDRAIL
- WIRE FENCE REMAINS
- STONEWALL
- EXPOSED ROCK OUTCROP
- SPOIL PILE
- SIGN
- WITNESS POST
- SHRUB
- TREE
- BORDERING VEGETATED WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- OVERHEAD WIRES
- ELECTRIC LINE
- UTILITY POLE
- GUY WIRE
- ELECTRIC BOX
- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BITUMINOUS BERM
- BIT. CONC.
- CC
- EOP
- GC
- UGE

**PROPOSED LEGEND:**

- PROPOSED TREELINE
- PROPOSED CONTOUR
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PE
- POHW
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED UTILITY POLE

**GRAPHIC SCALE**

SCALE: 1"=50'



44 ESTABROOK AVENUE

SEDIMENT AND EROSION CONTROL PLAN  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
SCALE: AS NOTED DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**

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WWW.MERIDIANASSOC.COM

SHEET No. 9 OF 14 PROJECT No. 6108

**REVISIONS**

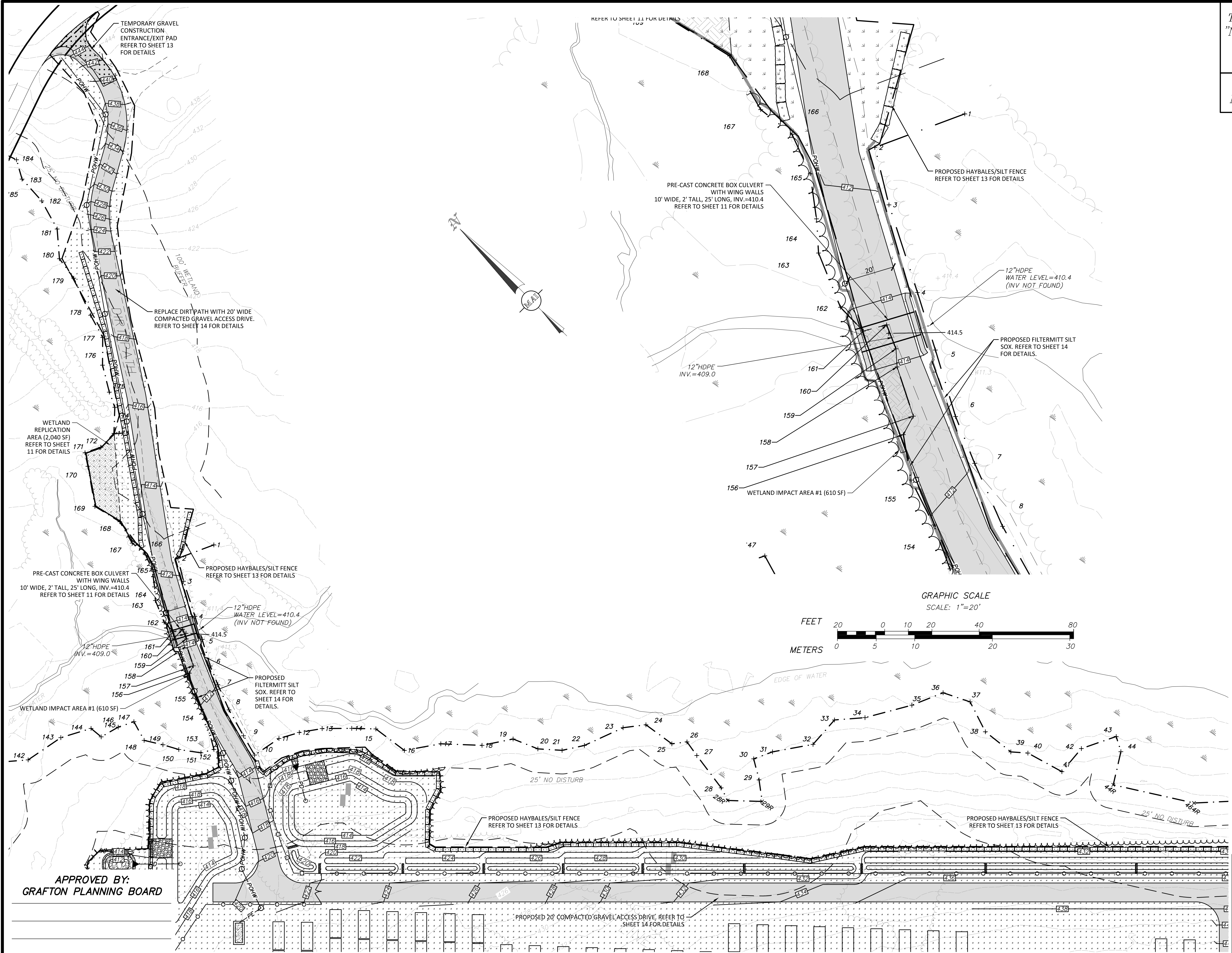
NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

BK. #567, PG. #41  
DWG. No. 6108\_SITE

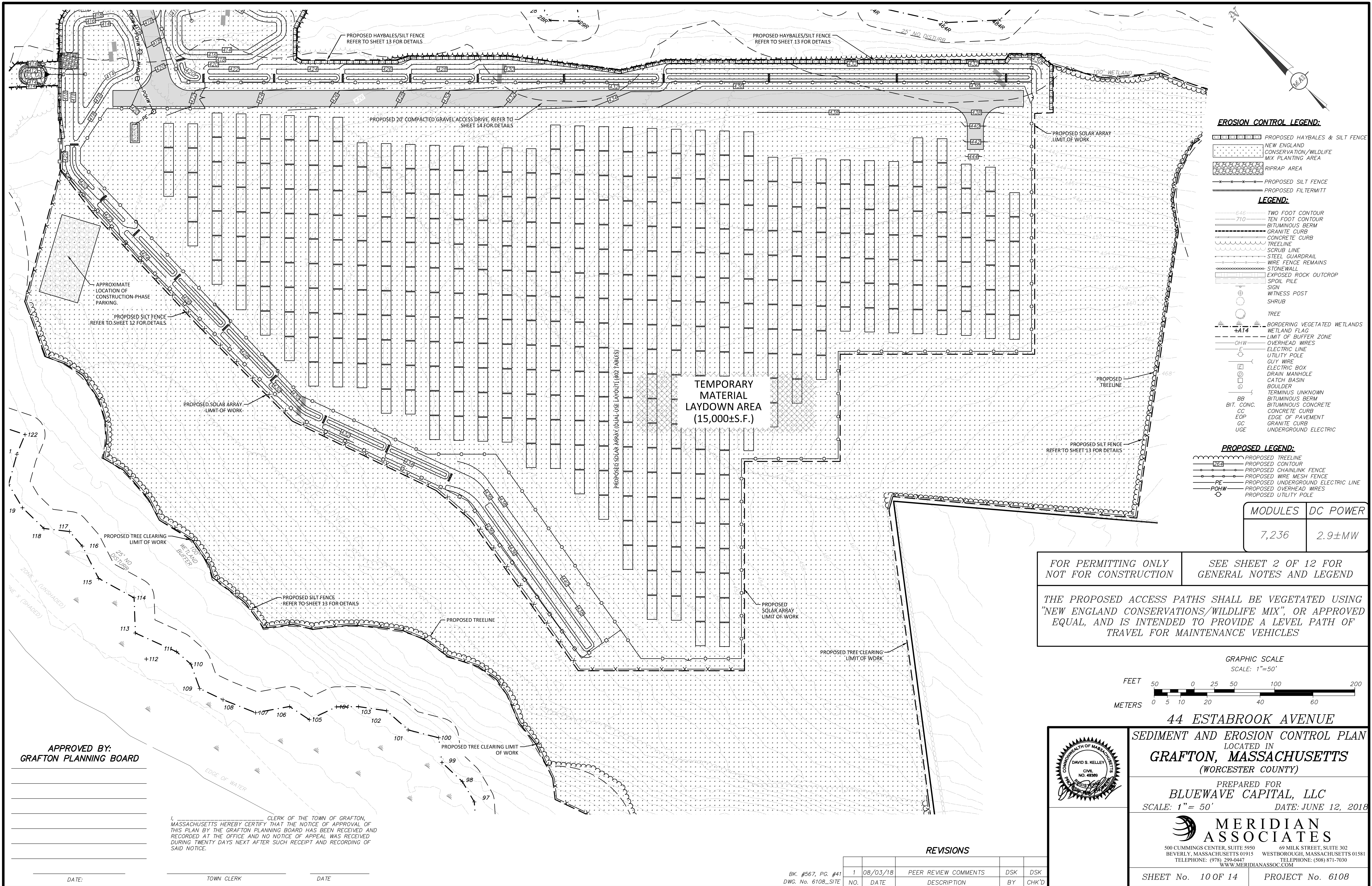
I, CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

DATE: TOWN CLERK DATE

APPROVED BY:  
GRAFTON PLANNING BOARD







**EROSION CONTROL LEGEND:**

- PROPOSED HAYBALES & SILT FENCE
- NEW ENGLAND CONSERVATION/WILDLIFE MIX PLANTING AREA
- RIPRAP AREA
- PROPOSED SILT FENCE
- PROPOSED FILTERMATT

**LEGEND:**

- 646 TWO FOOT CONTOUR
- 710 TEN FOOT CONTOUR
- BUTTERFLY CURB
- CONCRETE CURB
- TREELINE
- STEEL GUARDRAIL
- WIRE FENCE REMAINS
- STONEWALL
- EXPOSED ROCK OUTCROP
- SPOIL PILE
- SPR
- WITNESS POST
- SHRUB
- TREE
- BORDERING VEGETATED WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- OVERHEAD WIRES
- ELECTRIC LINE
- UTILITY POLE
- GUY WIRE
- ELECTRIC BOX
- DRAIN MANHOLE
- CATCH BASIN
- BOULDER
- TERMINUS UNKNOWN
- BB BIT. CONC.
- BIT. CONC.
- EOP EDGE OF PAVEMENT
- GC GRANITE CURB
- UGE UNDERGROUND ELECTRIC

**PROPOSED LEGEND:**

- PROPOSED TREELINE
- PROPOSED CHAINLINK FENCE
- PROPOSED WIRE MESH FENCE
- PROPOSED UNDERGROUND ELECTRIC LINE
- POHW PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

MODULES	DC POWER
7,236	2.9±MW

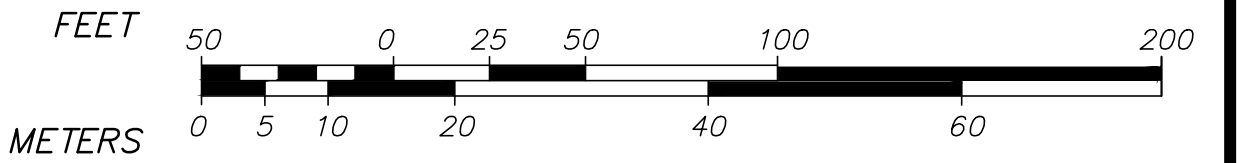
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GENERAL NOTES AND LEGEND

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TRAVEL FOR MAINTENANCE VEHICLES

GRAPHIC SCALE

SCALE: 1"=50'



44 ESTABROOK AVENUE

SEDIMENT AND EROSION CONTROL PLAN  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
SCALE: 1"= 50' DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**

500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
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WWW.MERIDIANASSOC.COM

SHEET No. 10 OF 14 PROJECT No. 6108

**REVISIONS**

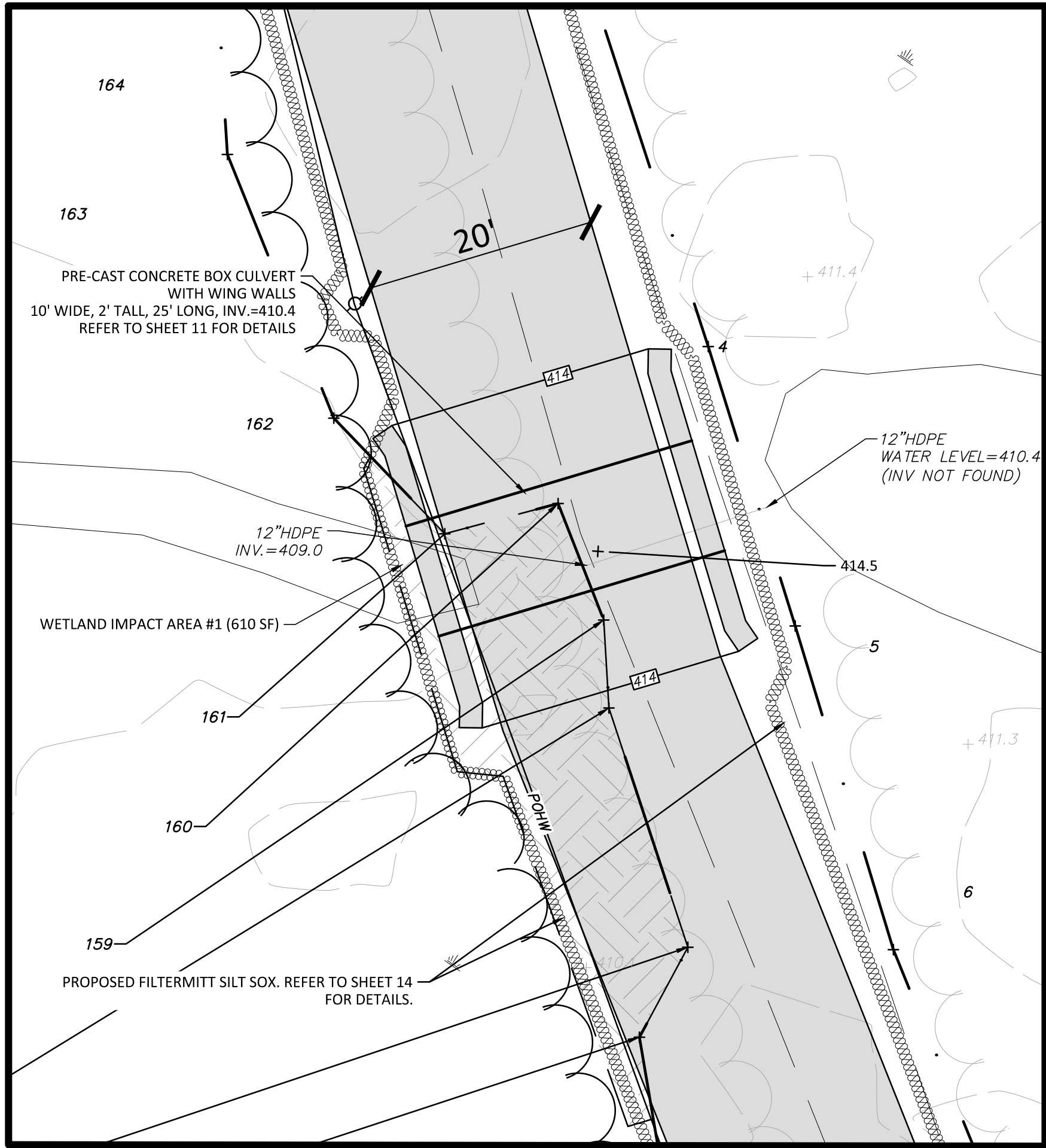
NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

APPROVED BY:  
GRAFTON PLANNING BOARD

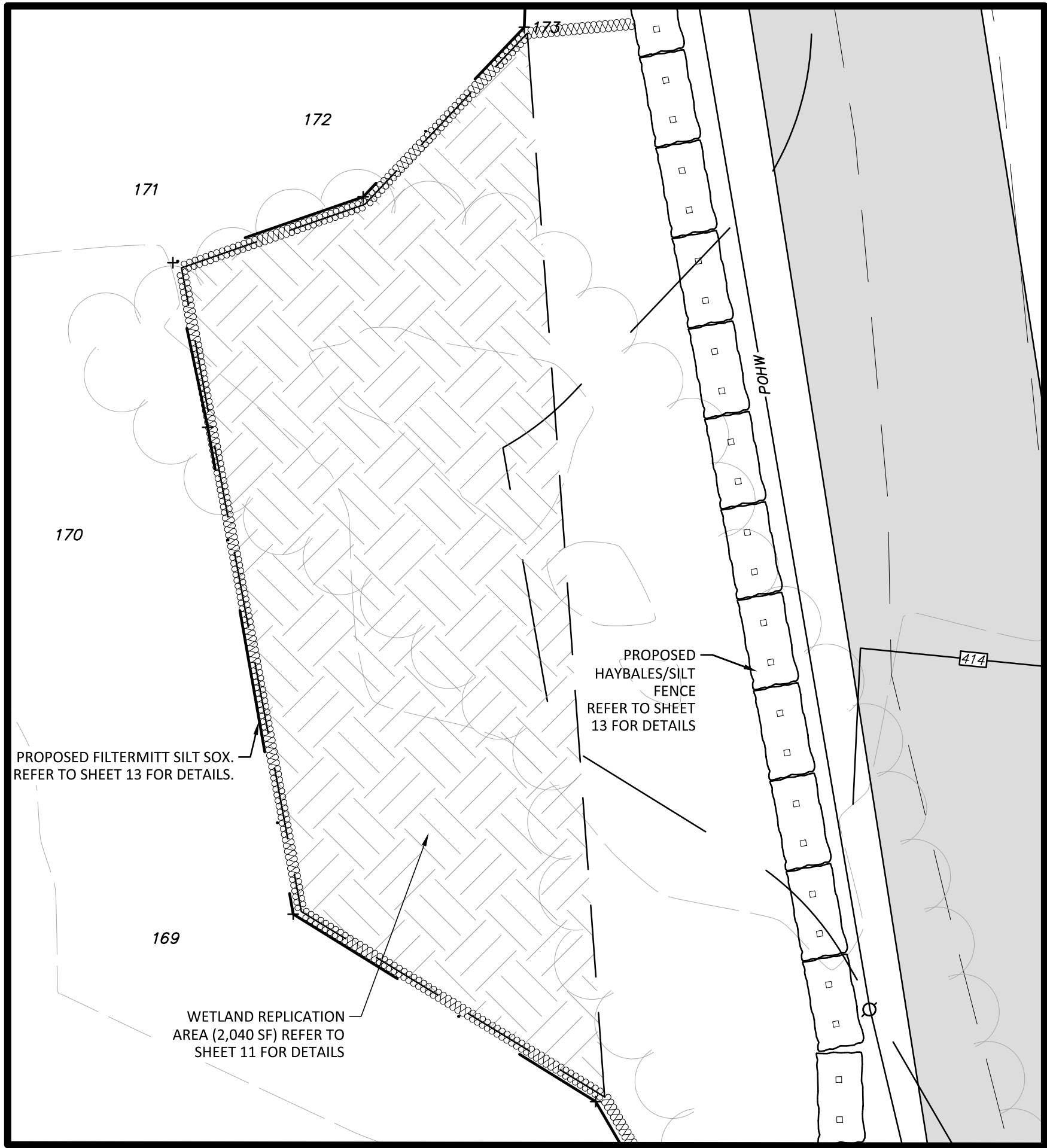
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DATE: \_\_\_\_\_ TOWN CLERK \_\_\_\_\_ DATE \_\_\_\_\_





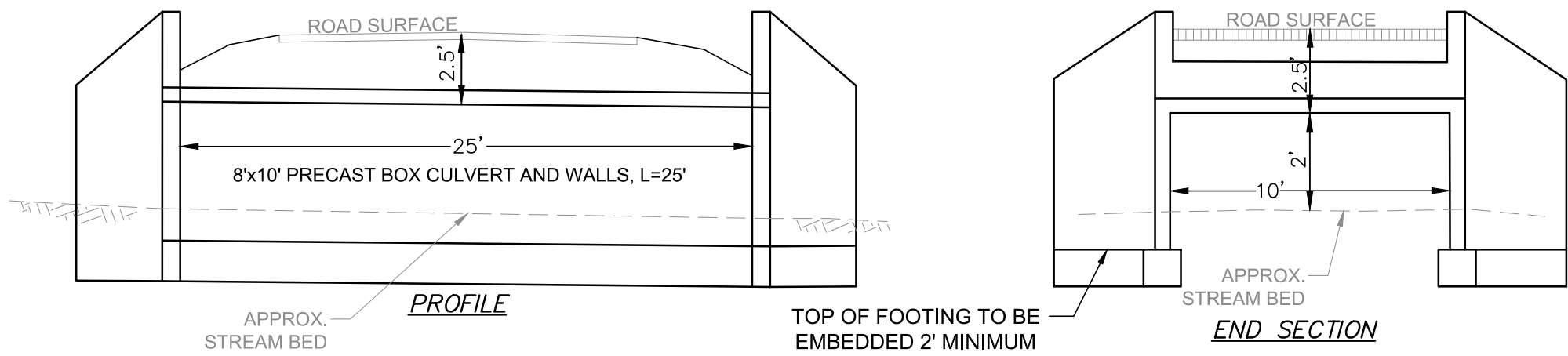
WETLAND IMPACT AREA #1  
GRAPHIC SCALE  
SCALE 1"=10'



WETLAND REPLICATION AREA  
GRAPHIC SCALE  
SCALE 1"=10'

WETLAND REPLICATION AREA CONSTRUCTION SEQUENCE

1. A QUALIFIED WETLAND SCIENTIST SHALL SUPERVISE ALL ASPECTS OF THE PROPOSED WETLAND REPLICATION AREA DURING CONSTRUCTION; EG., EROSION CONTROLS, SITE PREPARATORY, GRADING, BACKFILLING, PLANTING AND SEEDING.
2. FLAG OR STAKE LIMITS OF WETLAND REPLICATION AREA. FLAG TREES AND/OR SHRUBS ADJACENT TO THE EXISTING WETLAND BOUNDARY TO REMAIN. INSTALL EROSION CONTROL BARRIER (I.E., STRAW WATTLES) ALONG INTERSECTION OF THE WETLAND REPLICATION AREA AND ADJACENT WETLAND, TAKING INTO CONSIDERING THAT MINOR GRADING WITHIN THE WETLAND MAY BE REQUIRED TO ACHIEVE A SUITABLE HYDROLOGIC CONNECTION TO THE WRA. ONCE THE WETLAND REPLICATION AREA AND ADJACENT SIDE SLOPE HAVE BEEN GRADED, INSTALL AN EROSION CONTROL BARRIER (I.E., STRAW WATTLES) AT THE TOE OF SLOPE TO PROTECT THE WETLAND REPLICATION AREA.
3. DURING CONSTRUCTION OF THE WETLAND REPLICATION AREA, THE SUPERVISORY WETLAND SCIENTIST SHALL OVERSEE THE PROPOSED GRADING AND PLANTING SCHEME. THE FINAL ELEVATION SHALL BE DETERMINED IN THE FIELD AND WILL CORRESPOND TO THE ELEVATION OF THE ADJACENT WETLAND. DURING CONSTRUCTION, THE WETLAND REPLICATION AREA SHALL BE EXCAVATED TO FINAL GRADE UNLESS A SUITABLE TOPSOIL IS NOT ENCOUNTERED, AT WHICH TIME THE AREA WILL BE EXCAVATED TO ONE FOOT BELOW THE FINAL DESIGN GRADE TO FACILITATE THE PLACEMENT OF APPROVED CLEAN WETLAND SOIL (12% ORGANIC CARBON CONTENT (OR 20% ORGANIC MATTER CONTENT) AND PH OF 6.2-6.8) AS A SUITABLE SUBSTRATE FOR THE ESTABLISHMENT OF WETLAND VEGETATION. WETLAND SOILS WILL CONSIST OF THE TOPSOIL (A HORIZON) FROM THE WETLAND IMPACT AREA AND/OR A WETLAND SOIL MIXTURE MANUFACTURED BY COMBINING TOPSOIL WITH A SOIL TEXTURAL CLASS OF SANDY LOAM, FINE SANDY LOAM, OR SILT LOAM WITH DECOMPOSED LEAF LITTER AT A 1:1 RATIO. THE WETLAND SOIL SHALL BE FREE OF STUMPS, ROOTS, HEAVY OR STIFF CLAY, STONES, COARSE SAND, NOXIOUS WEEDS, WEED SEEDS OR OTHER LITTER. SETTLING OF SOILS SHALL BE TAKEN INTO CONSIDERATION FOR FINAL ELEVATIONS.
4. APPLY WETLAND SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., NEW ENGLAND WETMIX, OR EQUIVALENT) AT A RATE OF 1 LB PER 2,500 SF OR HIGHER IF APPLIED AT THE END OF THE GROWING SEASON AND LIGHTLY RAKE TO INSURE SEED-TO-SOIL CONTACT. THERE SHALL BE NO SEEDING IN AREAS OF STANDING WATER.
5. APPLY CONSERVATION SEED MIX TO SIDE SLOPES AT A RATE OF 1 LB PER 1,750 SF AND LIGHTLY RAKE TO INSURE SEED-TO-SOIL CONTACT.
6. APPLY A LIGHT MULCH OF CLEAN WEED FREE STRAW.
7. THE SUPERVISORY WETLAND SCIENTIST SHALL RESERVE THE RIGHT, DEPENDING ON WEATHER CONDITIONS, TO REQUIRE SUPPLEMENTAL WATERING OF WETLAND PLANTINGS.
8. REMOVE EROSION CONTROL BARRIERS UPON STABILIZATION OF THE SIDE SLOPE AND WETLAND REPLICATION AREA.



NOTES:

1. THIS DETAIL IS PROVIDED FOR REFERENCE ONLY.
2. FINAL DESIGN OF PRECAST ARCH IS TO BE PROVIDED BY VENDOR AND APPROVED BY THE ENGINEER OF RECORD AND THE TOWN OF GRAFTON BUILDING DEPARTMENT PRIOR TO INSTALLATION.

PRECAST BOX CULVERT DETAIL  
(N.T.S.)

APPROVED BY:  
GRAFTON PLANNING BOARD

I, \_\_\_\_\_ CLERK OF THE TOWN OF GRAFTON,  
MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF  
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SAID NOTICE.

DATE:

TOWN CLERK

DATE

REVISIONS

BK. #567, PG. #41  
DWG. No. 6108\_SITE

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

44 ESTABROOK AVENUE

WETLAND CROSSING AND REPLICATION DETAILS  
LOCATED IN  
GRAFTON, MASSACHUSETTS  
(WORCESTER COUNTY)

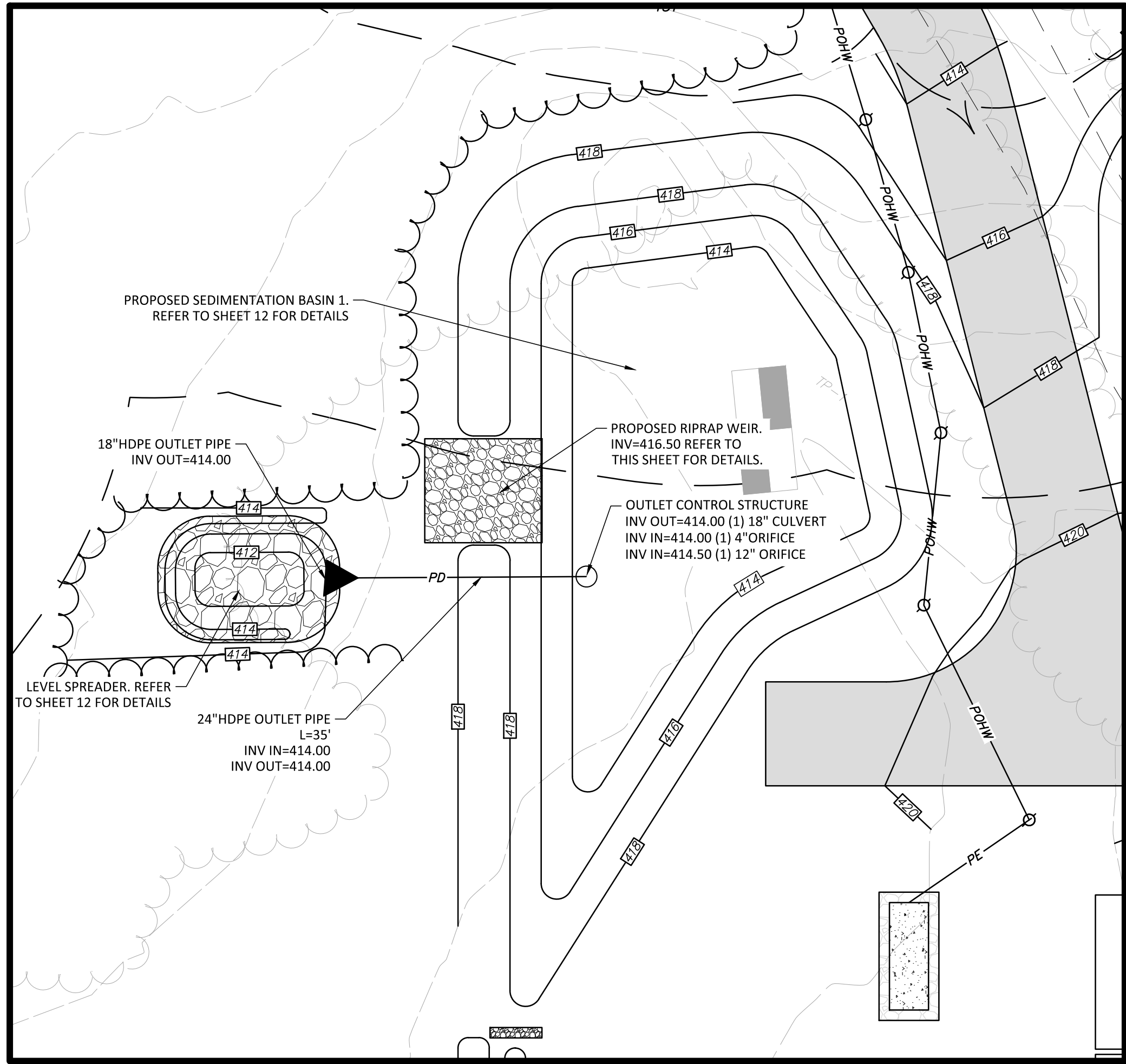
PREPARED FOR  
BLUEWAVE CAPITAL, LLC  
SCALE: 1"= 10' DATE: JUNE 12, 2018

MERIDIAN  
ASSOCIATES

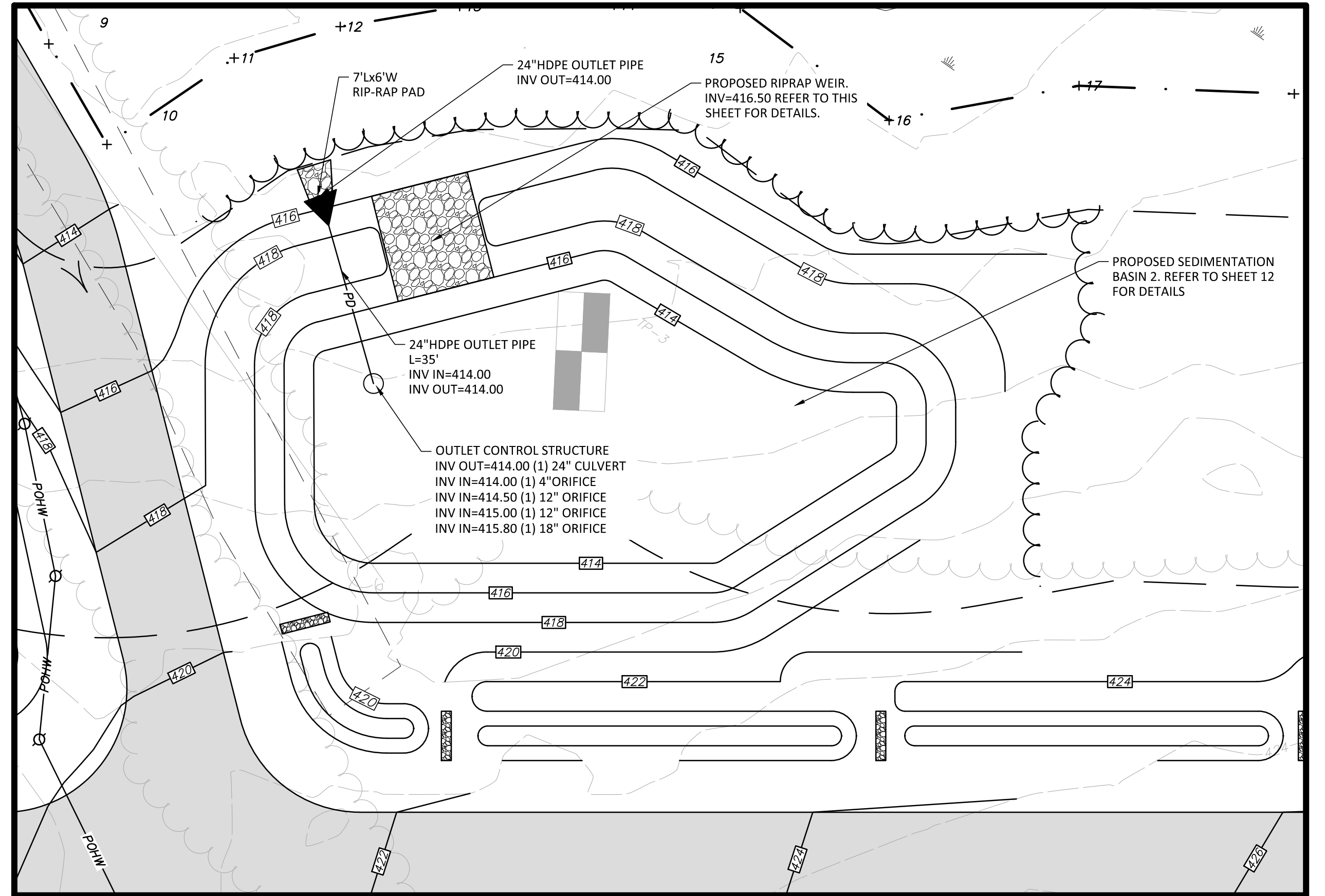
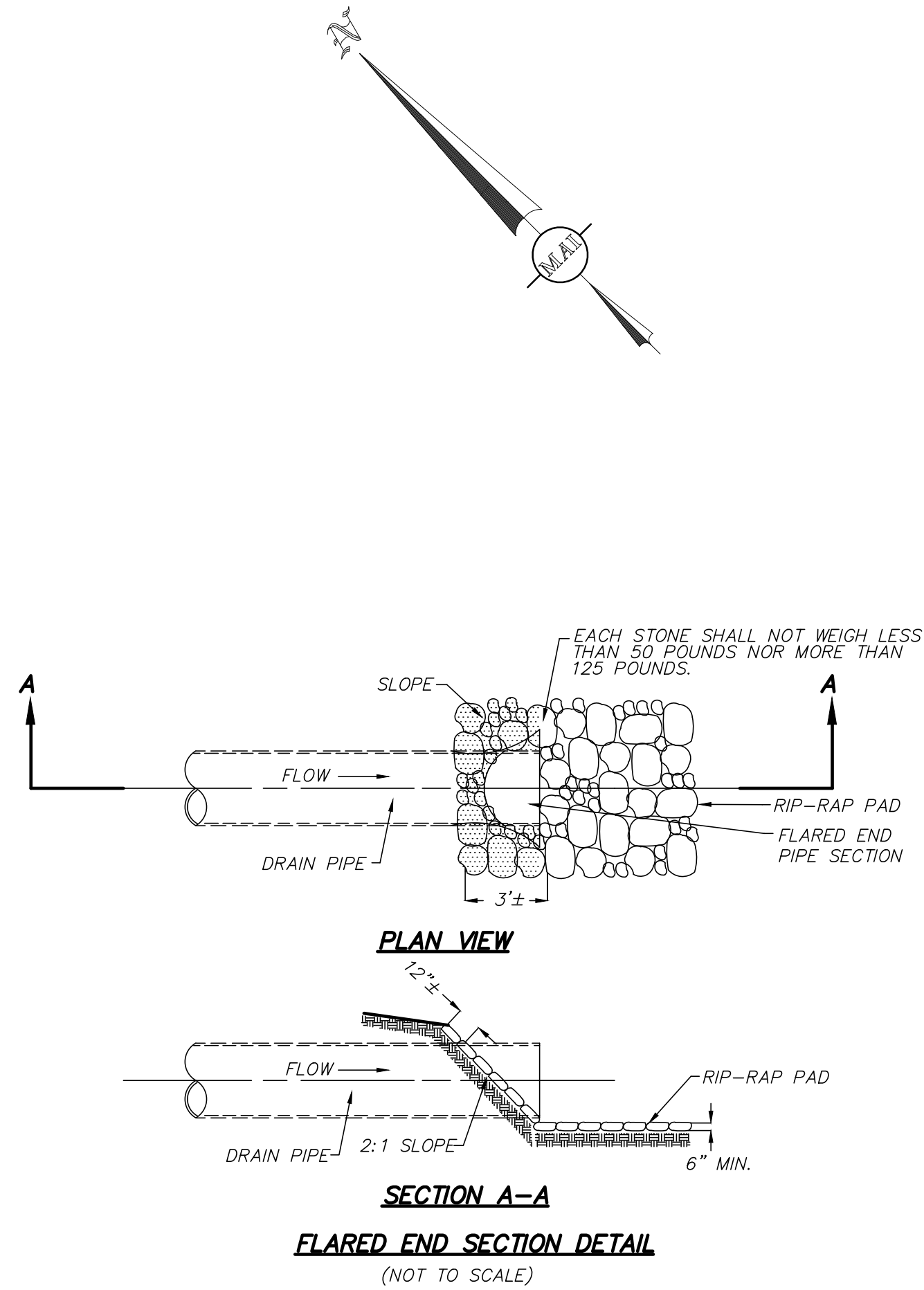
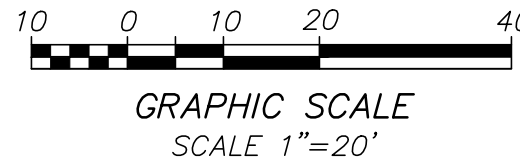
500 CUMMINGS CENTER, SUITE 5950 69 MILK STREET, SUITE 302  
BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
WWW.MERIDIANASSOC.COM

SHEET No. 11 OF 14 PROJECT No. 6108

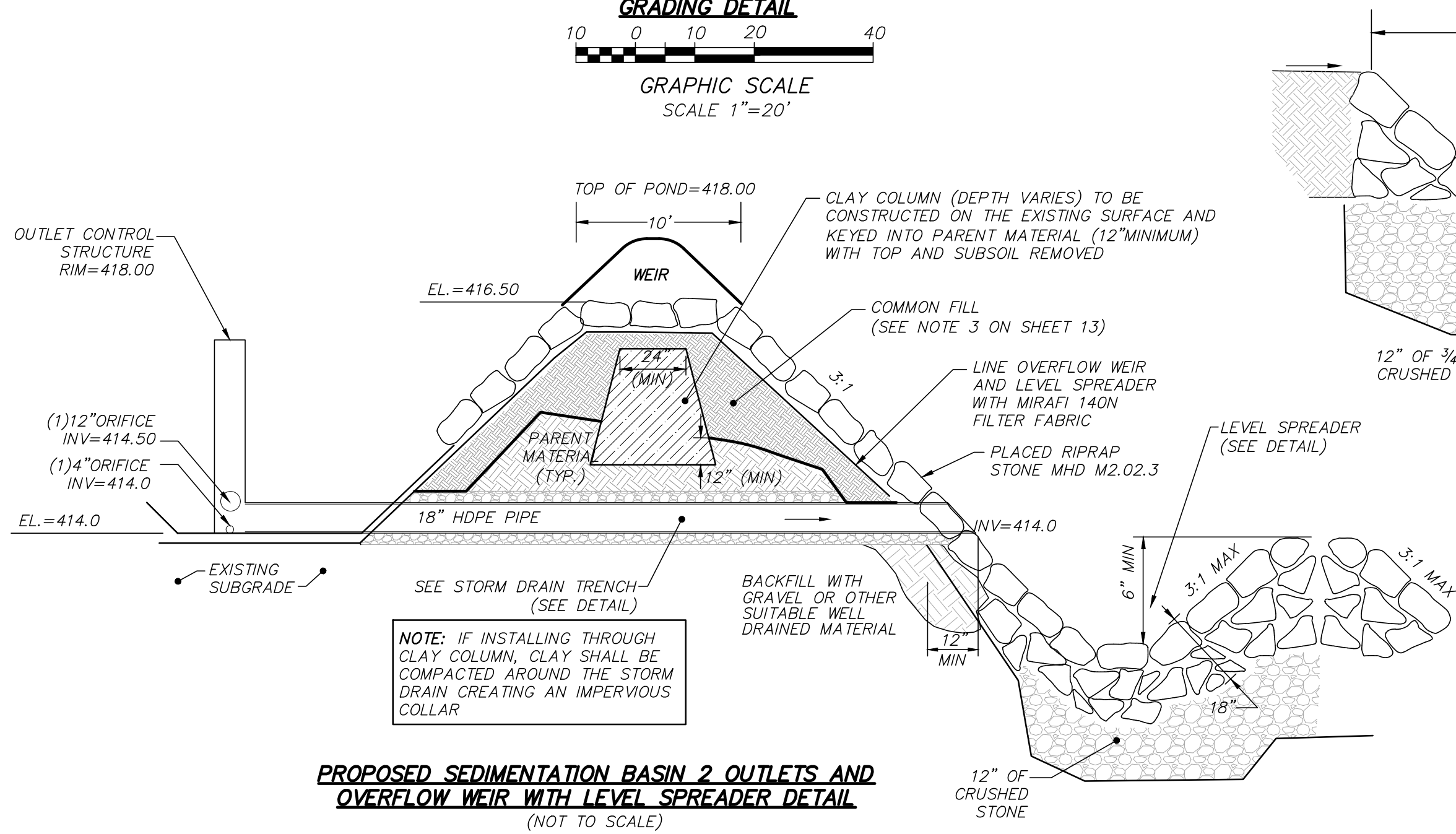
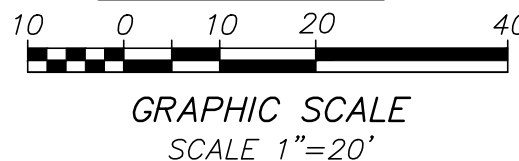




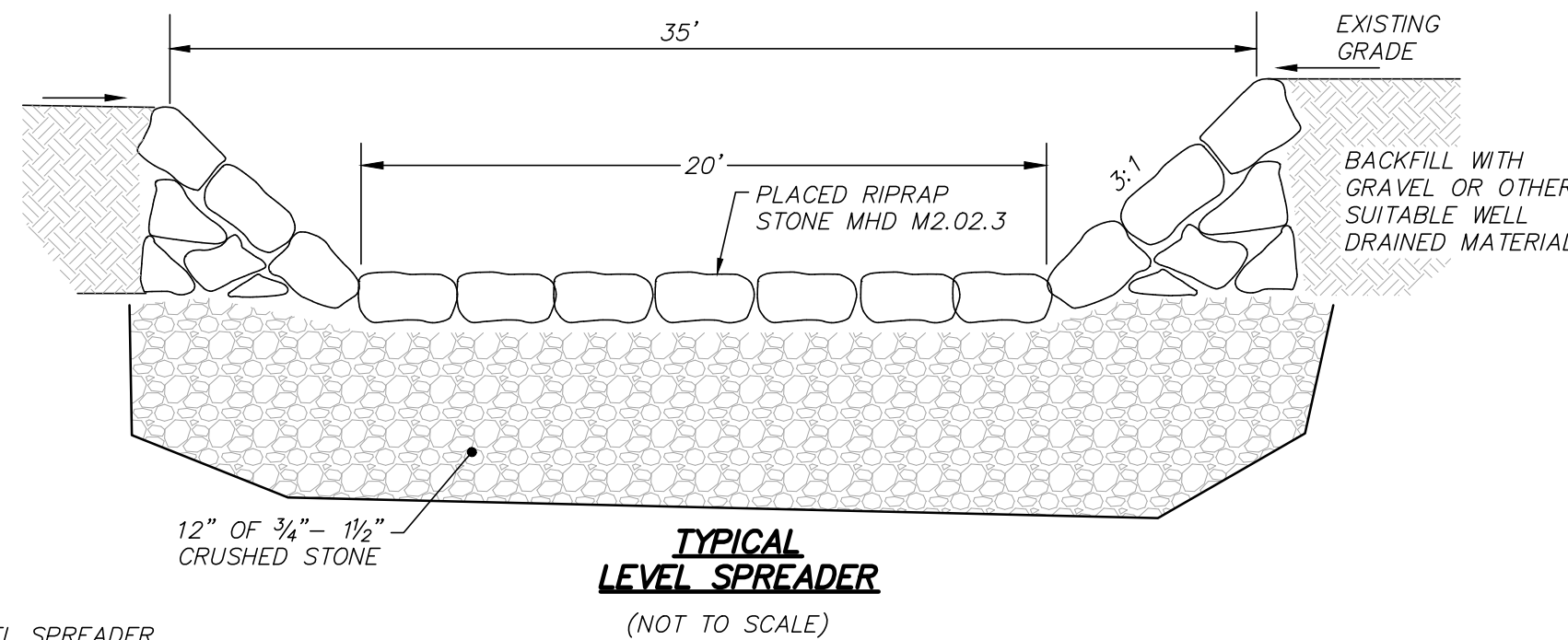
PROPOSED SEDIMENTATION BASIN 1  
GRADING DETAIL



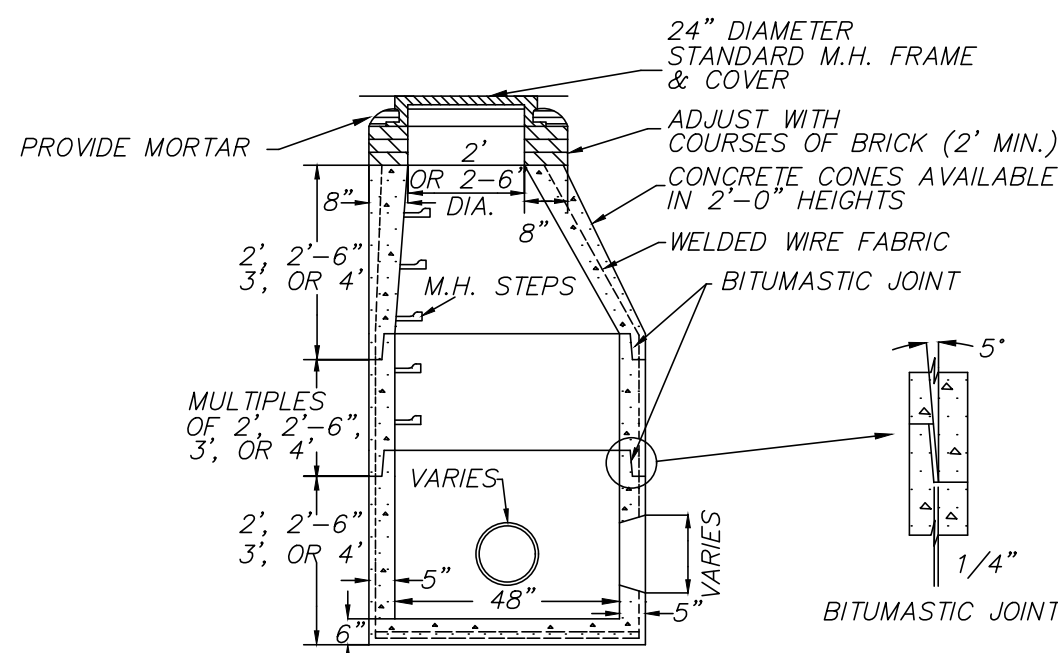
PROPOSED SEDIMENTATION BASIN 2  
GRADING DETAIL



PROPOSED SEDIMENTATION BASIN 2 OUTLETS AND  
OVERFLOW WEIR WITH LEVEL SPREADER DETAIL  
(NOT TO SCALE)

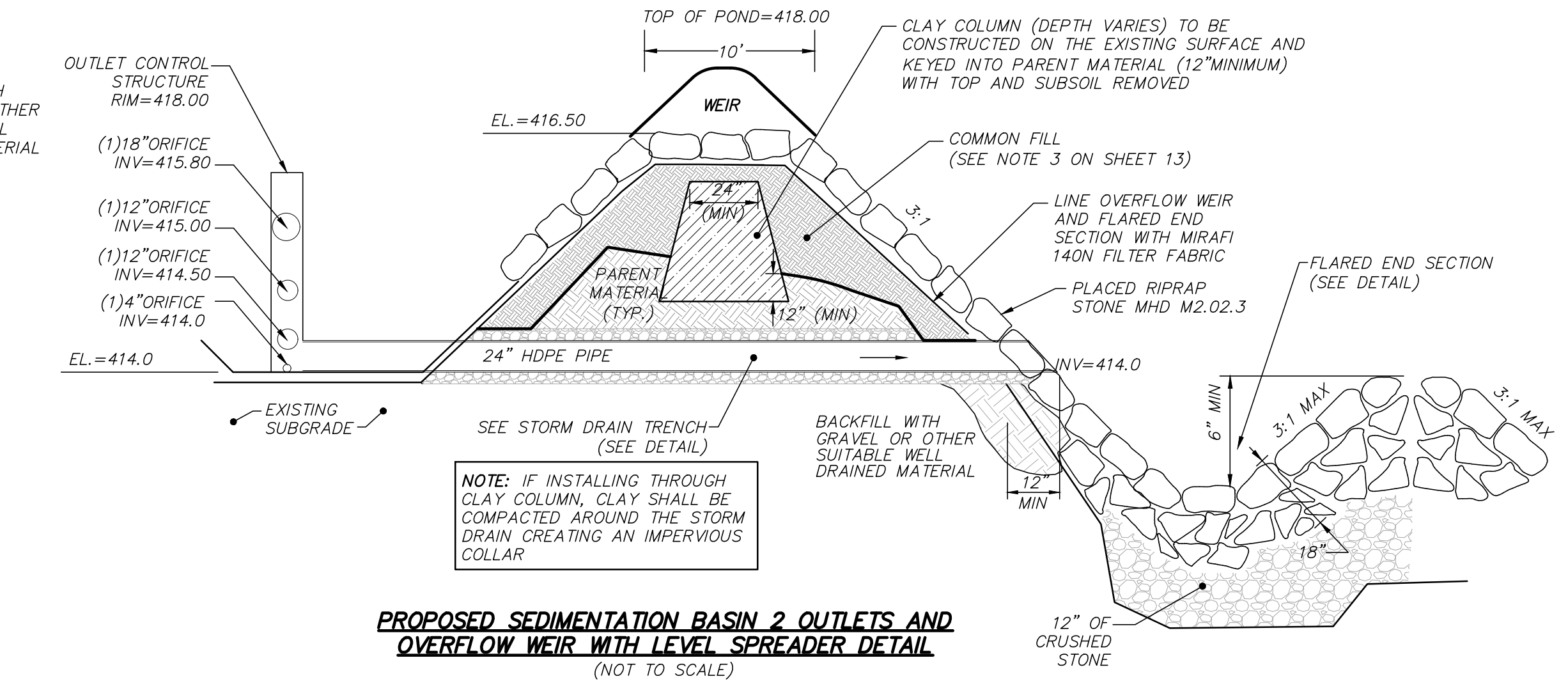


TYPICAL  
LEVEL SPREADER  
(NOT TO SCALE)

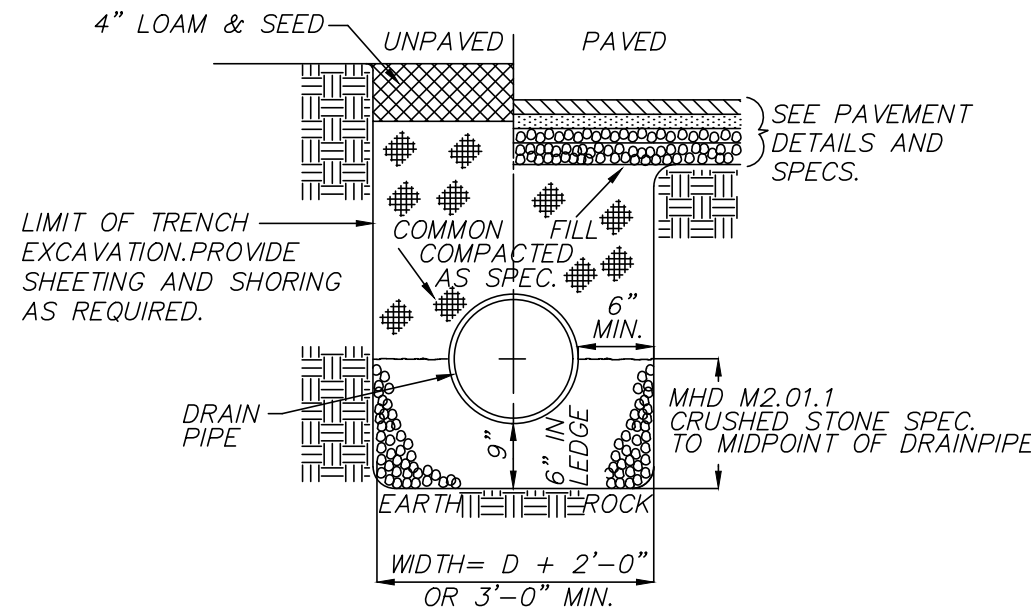


OUTLET CONTROL STRUCTURE  
(NOT TO SCALE)

- NOTES:
1. MANHOLE DESIGN TO LATEST ASTM C478.
  2. REINFORCING STEEL CONFORMS TO LATEST ASTM A 185.
  3. CONCRETE COMPRESSIVE STRENGTH - 4,000 PSI @ 28 DAYS.
  4. ONE POUR MONOLITHIC BASE.
  5. WHEN SPECIFIED, MANHOLES WATERPROOF COATED.
  6. STEPS - STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTICS (PS2-PFSL M.A. INDUSTRIES, INC.) CONFORMS TO LATEST ASTM C478 PARA-12.
  7. BITUMASTIC BUTYL RUBBER FOR JOINTS CONFORM TO LATEST ASTM C443 AND FED SS-S-201A SPEC.



PROPOSED SEDIMENTATION BASIN 2 OUTLETS AND  
OVERFLOW WEIR WITH LEVEL SPREADER DETAIL  
(NOT TO SCALE)



STORM DRAIN TRENCH DETAIL  
(NOT TO SCALE)

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

APPROVED BY:  
GRAFTON PLANNING BOARD

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_, CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

DATE: \_\_\_\_\_ TOWN CLERK \_\_\_\_\_ DATE \_\_\_\_\_

44 ESTABROOK AVENUE  
SEDIMENTATION BASIN GRADING DETAILS  
LOCATED IN  
GRAFTON, MASSACHUSETTS  
(WORCESTER COUNTY)

PREPARED FOR  
BLUEWAVE CAPITAL, LLC  
SCALE: AS NOTED DATE: JUNE 12, 2018

MERIDIAN  
ASSOCIATES

500 CUMMINGS CENTER, SUITE 5950 69 MILK STREET, SUITE 302  
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SHEET No. 12 OF 14 PROJECT No. 6108



NOTES:

- EXISTING GROUND WITHIN THE PROPOSED CHAINLINK FENCE SHALL BE CLEARED, STUMPED AND RE-GRADED TO ELIMINATE MINOR SURFACE DISTURBANCES. RE-VEGETATION OF THE SITE SHALL BE ESTABLISHED WITH LOW GROWTH GROUND COVER.
- THE PROPOSED LIMIT OF WORK LINE ALSO DEPICTS THE EXTENT OF TREE CLEARING TO BE PERFORMED ON THE PROJECT SITE. NO TREES OUTSIDE THE DESIGNATED LIMIT OF WORK LINE ARE TO BE REMOVED BY THE CONTRACTOR.
- COMMON FILL (SITE GRADING AREAS) SHALL CONSIST OF MINERAL SOIL SUBSTANTIALLY FREE FROM ORGANIC MATERIALS, LOAM, WOOD TRASH AND OTHER OBJECTIONABLE MATERIALS WHICH MAY BE COMPRESSIBLE OR WHICH CANNOT BE PROPERLY COMPACTED. SELECT COMMON FILL SHALL NOT CONTAIN STONES LARGER THAN 2-IN. IN LARGEST DIAMETER AND SHALL HAVE A MAXIMUM OF 25% PASSING THE NO. 40 SIEVE AND A MAXIMUM OF 20% PASSING THE NO. 200 SIEVE. SELECT COMMON FILL SHALL NOT CONTAIN GRANITE BLOCKS, BROKEN CONCRETE, MASONRY RUBBLE OR OTHER SIMILAR MATERIALS. IT SHALL HAVE PHYSICAL PROPERTIES SUCH THAT IT CAN BE READILY SPREAD AND COMPACTED DURING FILLING. SNOW, ICE AND FROZEN SOIL WILL NOT BE PERMITTED. SOIL EXCAVATED FROM THE STRUCTURE AREAS AND WHICH MEETS THE ABOVE REQUIREMENTS MAY BE USED.
- ORDINARY FILL SHALL BE WELL GRADED, NATURAL INORGANIC SOIL, FREE OF ORGANIC OR OTHER WEAK OR COMPRESSIBLE MATERIALS, FROZEN MATERIALS, AND OF STONES LARGER THAN TWO THIRDS (2/3) THE LIFT THICKNESS. IT SHALL BE OF SUCH NATURE AND CHARACTER THAT IT CAN BE COMPACTED TO THE SPECIFIED DENSITIES IN A REASONABLE LENGTH OF TIME. IT SHALL BE FREE OF PLASTIC CLAY, OF ALL MATERIALS SUBJECT TO DECAY, DECOMPOSITION, OR DISSOLUTION, AND OF CINDERS OR OTHER MATERIALS THAT WILL CORRODE PIPING OR OTHER METAL. IT SHALL HAVE A MINIMUM DRY DENSITY OF NOT LESS THAN 120 POUNDS PER CUBIC FOOT. MATERIAL FROM EXCAVATION ON THE SITE MAY BE USED AS ORDINARY FILL IF IT MEETS THE ABOVE REQUIREMENTS. ORDINARY FILL SHALL HAVE A MAXIMUM OF 60% PASSING THE #40 SIEVE, AND A MAXIMUM OF 20% PASSING THE #200 SIEVE. IT SHOULD NOT CONTAIN BROKEN CONCRETE, MASONRY RUBBLE OR OTHER SIMILAR MATERIALS, AND SHALL HAVE PHYSICAL PROPERTIES SUCH THAT IT CAN BE READILY SPREAD AND COMPACTED DURING FILLING. SNOW, ICE AND FROZEN SOIL SHALL NOT BE PERMITTED.
- SELECT COMMON FILL (ROADWAY AREAS) SHALL BE PLACED IN LAYERS HAVING A MAXIMUM THICKNESS OF 8 IN. MEASURED BEFORE COMPACTION. EACH LAYER OF FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY DETERMINED BY THE ASTM D1557. CONSTRUCTION FILL SHALL CONSIST OF FULLY LOADED TEN WHEEL TRUCKS, A TRACTOR DOZER WEIGHING AT LEAST 30,000 LBS AND OPERATED AT FULL SPEED, A HEAVY VIBRATORY ROLLER, OR OTHER METHOD ONLY AS APPROVED BY THE ENGINEER. COMPACTION OF SELECT COMMON FILL IN CONFINED AREAS ADJACENT TO STRUCTURES SHALL BE ACCOMPLISHED BY HAND OPERATED VIBRATORY EQUIPMENT OR MECHANICAL TAMPERS APPROVED BY THE ENGINEER. AS A MINIMUM, COMPACTION OF SELECT COMMON FILL SHALL CONSIST OF FOUR COVERAGES OF THE APPROVED EQUIPMENT.

- SITE PREPARATION SHALL INCLUDE CLEARING, GRUBBING, DELETERIOUS SOILS, VEGETATION AND DEBRIS. ALL TREES, STUMPS, BRUSH, SHRUBS, ROOTS, GRASS, WEEDS, RUBBISH, STONES LARGER THAN 2-IN. IN THE LARGEST DIAMETER AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF FROM AREAS TO BE FILLED AND COMPACTED. AREAS OUTSIDE OF THE LIMITS OF WORK SHALL BE PROTECTED FROM DAMAGE AND NO EQUIPMENT OR MATERIALS SHALL BE STORED IN THESE AREAS. NO STUMPS, TREES, LIMBS, OR BRUSH SHALL BE BURIED IN ANY FILLS OR EMBANKMENTS.
- EROSION AND SEDIMENT CONTROL, BOTH DURING AND AFTER CONSTRUCTION, SHALL BE PROVIDED AS REQUIRED TO RETAIN SEDIMENT ONSITE, AND TO CONTROL EROSION OF EMBANKMENTS, TEMPORARY AND FINAL EXPOSED SLOPES, AND TEMPORARY MATERIAL STOCKPILE(S). SILT FENCES, CHECK DAMS, DRAINAGE DITCHES OR SWALES, TEMPORARY SEEDING, AND PRE-MANUFACTURED TEXTILES, GEOTUBES, GEORIG, CELLULAR GEOWEB, ETC., SHALL BE UTILIZED AS APPROPRIATE. EROSION AND SETTLEMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL PERMITS AND CODES AND THIS SPECIFICATION. DURING THE EXCAVATION OF THE WORK AT THE SITE, OPERATIONS SHALL BE CONTINUOUSLY MONITORED TO AVOID THE CREATION OF CONDITIONS THAT COULD LEAD TO EXCESSIVE EROSION SURF SOIL WITH SURFACE RUNOFF FROM THE WORK AREAS. CONTROLS SHALL BE PROVIDED TO PROTECT THE WATER QUALITY AND SHALL BE IN ACCORDANCE WITH PROJECT DOCUMENTS AND ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. EROSION CONTROL MEASURES SHALL BE EMPLOYED TO REDUCE EROSION OF SLOPES AND SILTATION OF OFF-SITE OUTFALLS AND TRIBUTARIES.
- UPON SIGNS OF CONCENTRATED FLOW BY EVIDENCE OF GULLYING OR RILLING IN DISTURBED AREAS, HAYBALES SHALL BE PLACED IN THESE AREAS, SPACED EVERY 50' IN THE UPGRADIENT SLOPE.
- ALL DISTURBED AREAS SHALL BE RE-ESTABLISHED WITH "NEW ENGLAND CONSERVATION/WILDLIFE MIX" OR APPROVED EQUAL.

**ESTABLISHED GUIDELINES FOR NEW  
ENGLAND CONSERVATION/WILDLIFE MIX**  
NEW ENGLAND WETLAND PLANTS, INC.

**GENERAL:**  
THE MIX PROVIDES A PERMANENT COVER OF GRASSES, WILDFLOWERS AND LEGUMES TO PROVIDE BOTH GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE. THIS MIX IS DESIGNED TO BE A NO MAINTENANCE SEEDING, AND IT IS APPROPRIATE TO CUT AND FILL SLOPES, DETENTION BASIN SLOPES, AND DISTURBED AREAS ADJACENT TO COMMERCIAL AND RESIDENTIAL PROJECTS. ALWAYS APPLY ON CLEAN BARE SOIL. THE MIX MAY BE APPLIED BY HYDRO-SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SEED TO SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING SEEDING. LATE SPRING THROUGH EARLY SUMMER SEEDING WILL BENEFIT WITH A LIGHT MULCHING OF WEED-FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING WILL BE REQUIRED. LATE FALL AND WINTER DORMANT SEEDING REQUIRE AN INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE. PREPARATION OF A CLEAN WEED FREE SOIL SURFACE IS NECESSARY FOR OPTIMAL RESULTS.

**SPECIES LIST:**

- ELYMUS VIRGINICUS
- SCHIZACHYRIUM SCOPARIUM
- FESTUCA RUBRA
- ANDROPOGON GERARDII
- CHAMAECRISTA FASCICULATA
- PANICUM CLANDESTINUM
- PANICUM VIRGATUM
- SORGHASTRUM NUTANS
- HELENIUM AUTUMNALE
- HELIOPSIS HELIANTHOIDES
- VERBENA HASATA
- ASCLEPIAS SYRIACA
- ASTER UMBELLATUS
- EUPATORIUM PURPUREUM
- SOLIDAGO JUNCEA
- ZIZIA AUREA

**SEED BED PREPARATION:**

REMOVE ALL INVASIVE SPECIES, TILL EXISTING SOIL AND RAKE SMOOTH. APPLY 3" OF COMPOSTED LEAF LITTER. ALL AREAS WHERE ROOTS HAVE BEEN GRUBBED SHALL BE TILLED.

**SEED APPLICATION RATE:**

THE IDEAL PLANTING DEPTH IS 1/4"-1/2". UNDER IDEAL CONDITIONS SEEDS LAYING ON THE SURFACE WILL GERMINATE. RECOMMENDED APPLICATION RATE FOR SEEDING IS 1 LBS PER 1,750 SQUARE FEET.

**SEEDING DATES:**

FOR FALL INSTALLATION, SEED BETWEEN AUGUST 15 AND SEPTEMBER 10. FOR SPRING INSTALLATION, SEED AS EARLY AS POSSIBLE SOMETIME BETWEEN APRIL 15 AND MAY 10.

**FERTILIZATION AND SOIL REQUIREMENTS:**

REFER TO MANUFACTURERS RECOMMENDATIONS

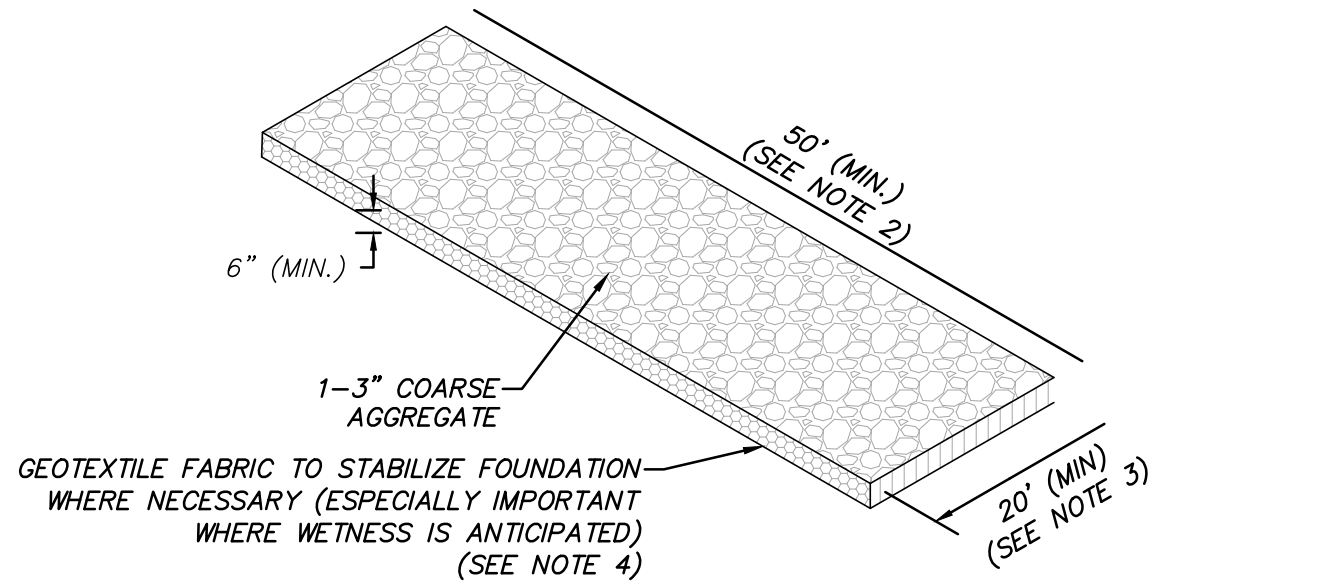
**GENERAL MAINTENANCE:**

REFER TO MANUFACTURERS RECOMMENDATIONS

**ESTABLISHMENT:**

REFER TO MANUFACTURERS RECOMMENDATIONS

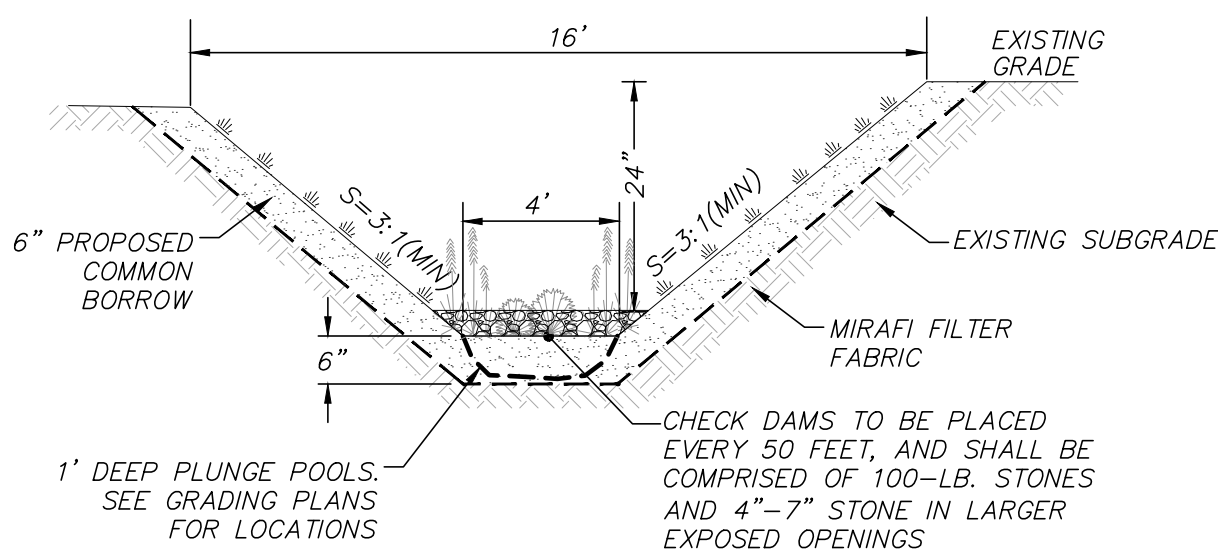
FOR PERMITTING ONLY  
NOT FOR CONSTRUCTION



NOTES:

- THE SOLE PURPOSE OF THIS DETAIL IS TO PROVIDE A STABLE ENTRANCE AND EXIT FROM A CONSTRUCTION SITE OR WETLAND CROSSING AND KEEP MUD AND SEDIMENT OFF PUBLIC ROADS AND WETLANDS IN ACCORDANCE WITH THE RECOMMENDATIONS STATED IN THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AS PREPARED BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- EXTEND PAD BEYOND 50 FEET FOR HEAVY CONSTRUCTION TRAFFIC AS NECESSARY. LONGER ENTRANCES WILL PROVIDE BETTER CLEANING ACTION.
- THE PAD SHALL EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS DRIVE.
- WHERE NECESSARY, GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE FILL AND THE EARTH SURFACE BELOW THE PAD TO REDUCE THE MIGRATION OF SOIL PARTICLES FOR UNDERLYING SOIL INTO THE STONE AND VICE VERSA.

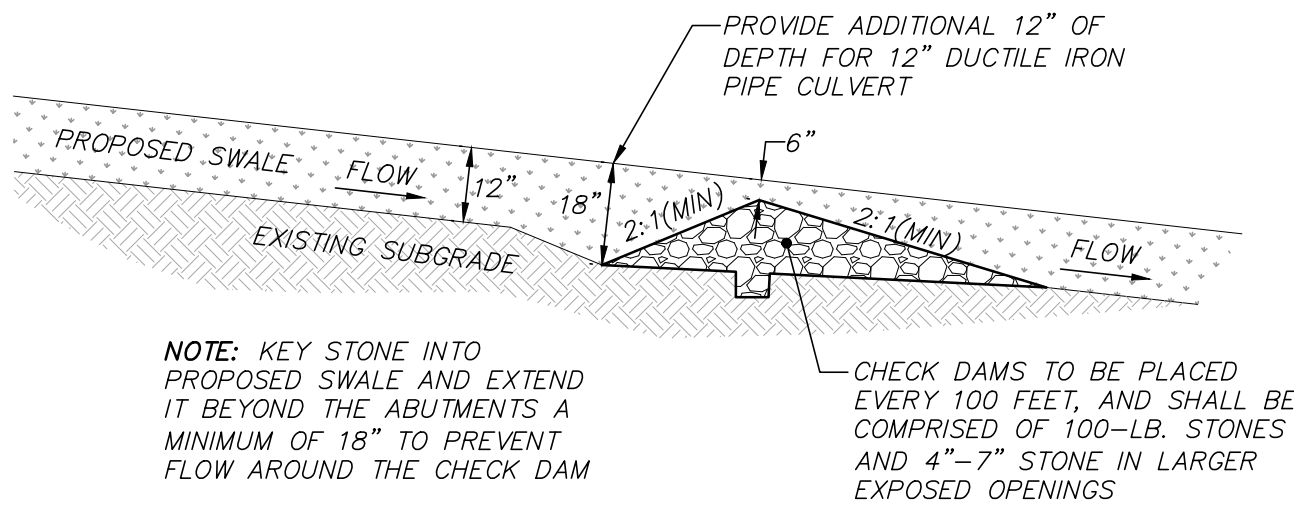
**TEMPORARY GRAVEL CONSTRUCTION  
TRACKING PAD**  
(NOT TO SCALE)



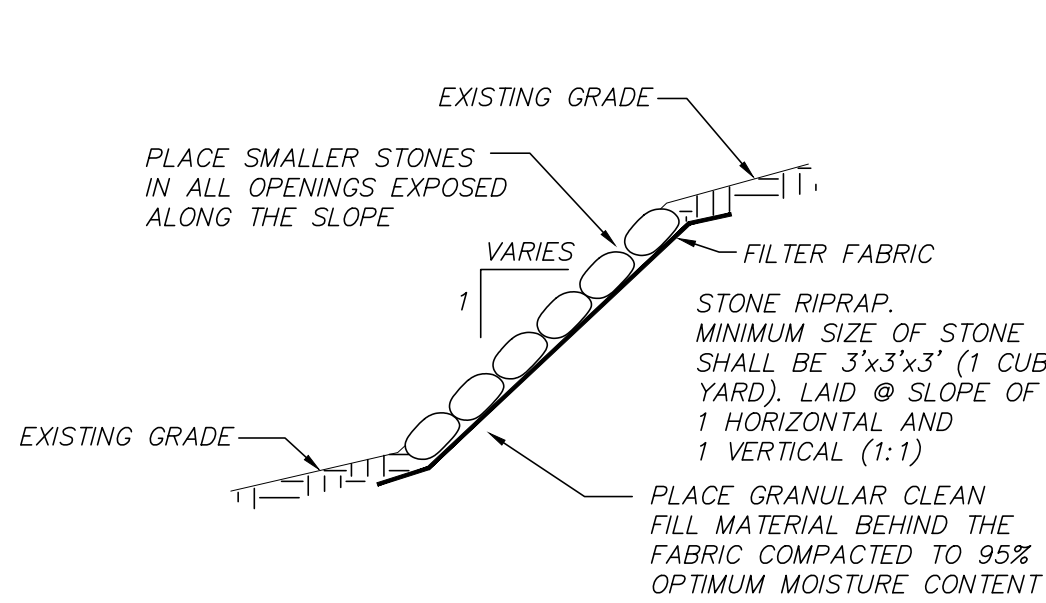
**WATER QUALITY SWALE**  
(NOT TO SCALE)

NOTES:

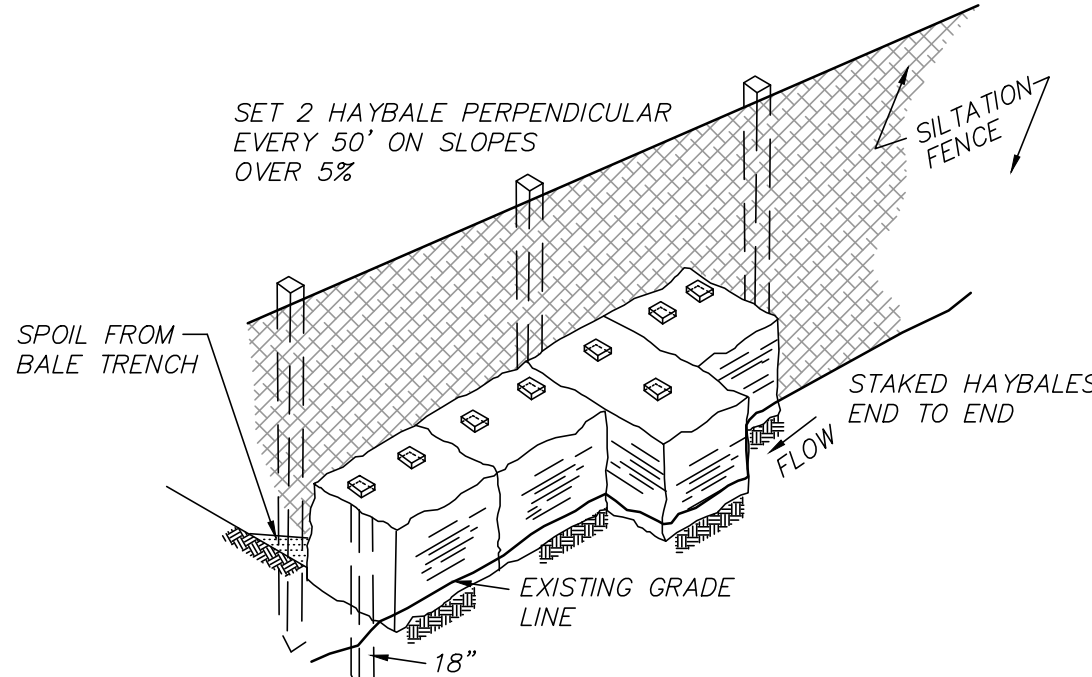
- THE PLANTING PLAN WITHIN THE SWALES SHOULD INCLUDE A MIX OF HERBACEOUS PERENNIALS, SHRUBS, AND UNDERSTORY TREES THAT CAN TOLERATE INTERMITTENT PONDING, AND EXTENDED DRY PERIODS.
- WATER QUALITY SWALES ARE TO BE SURROUNDED BY THREE (3) FOOT TALL WIRE MESH FENCING.



**TYPICAL STONE CHECK DAM**  
(NOT TO SCALE)



**STONE RIPRAP SLOPE PROTECTION**  
(NOT TO SCALE)



NOTES:

- BALES TO BE TIED WITH ORGANIC FIBER TWINE ONLY NO PLASTIC OR WIRE.
- HAYBALES TO BE SECURED WITH A MINIMUM OF TWO (2) 1" x 4" WOODEN STAKES PER BALE DRIVEN 18" MIN. INTO GRADE.

**HAYBALE WITH SILT FENCE BARRIER**  
(NOT TO SCALE)

DWG. No. 6108\_DET

Proud Member and Participant of:  
[www.eastcoasterosion.com](http://www.eastcoasterosion.com)  
443 Bricker Road, Bernville, PA 19506  
1.800.582.4005 • +1.610.488.8496 Fax +1.610.488.8494

Material and Performance Specification

**ECSC-2™ Double Net Straw/Coconut Rolled Erosion Control Product**

Description:  
The ECSC-2™ is made with uniformly distributed 70% agricultural straw, 30% coconut fiber and two polypropylene nets securely sewn together with degradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECSC-2™ has functional longevity of approximately 24 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 2:1 to 1:1 and low to medium flow channels. The ECSC-2™ meets Type 3.8 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Matrix:	1	2
Netting:	Type	Net Color
Top:	Medium weight UV Stabilized Polypropylene	Green
Middle:	None	
Bottom:	Lightweight Photodegradable Polypropylene	
Net Opening:	Top	Middle
	0.5" x 0.5"	0.75" x 0.75"
Thread:	Type	Color
	Degradable Thread	White
Roll Sizes:	Standard	Size
Width:	7.5 ft. 2.3 m	3.75 ft. 1.1 m
Length:	120 ft. 36.6 m	240 ft. 73.2 m
Weight ±10%:	57 lbs. 25.9 kg	57 lbs. 25.9 kg
Area:	100 yd² 83.6 m²	100 yd² 83.6 m²
#/Pallet:	20	9

Index Value Properties*			
Property	Test Method	Typical	
Mass/Unit Area	ASTM D6475	9.00 oz/yd²	305.1 g/m²
Thickness	ASTM D6525	0.30 in	7.62 mm
Tensile Strength-MD	ASTM D6818	178 lb/ft	2.60 kN/m
Elongation-MD	ASTM D6818	31 %	
Tensile Strength-TD	ASTM D6818	148 lb/ft	2.16 kN/m
Elongation-TD	ASTM D6818	22.4 %	
Light Penetration	ASTM D6567	13 %	
Density / Specific Gravity	ASTM D792	N/A	
Water Absorption	ASTM D1117	436 %	

\*May differ depending upon raw material variations

Slope Performance Design Values*			
Property	Test Method	Value	
C-Factors	ASTM D6459	0.02	
Slope Length (L)	≤ 3:1	3:1-2:1	≥ 2:1
< 50 ft (15 m)	0.017	0.028	0.080
50 ft – 100 ft	0.031	0.059	0.125
>100 ft (30 m)	0.080	0.090	0.170

\*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

Bench-Scale Testing* (MTPEP**)			
Test Method	Parameters	Results	
ECTC Method 2 Rainfall	50mm (2in) / hr-30 min	SLR**=8.52	
	100mm (4in) / hr-30 min	SLR**=11.01	
	150mm (6in) / hr-30 min	SLR**=14.28	
ECTC Method 3 Shear Resistance	Shear at .50 in soil loss	2.16 lb/ft²	
ECTC Method 4 Germination	Top soil; Fescue; 21 day incubation	503 %	

\*Bench scale tests should not be used for design purposes.  
\*\*Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP+1-C Factor  
\*The preceding test data excerpts were reproduced with the permission of AASHTO; however, this does not constitute endorsement or approval of the product, material or device by AASHTO

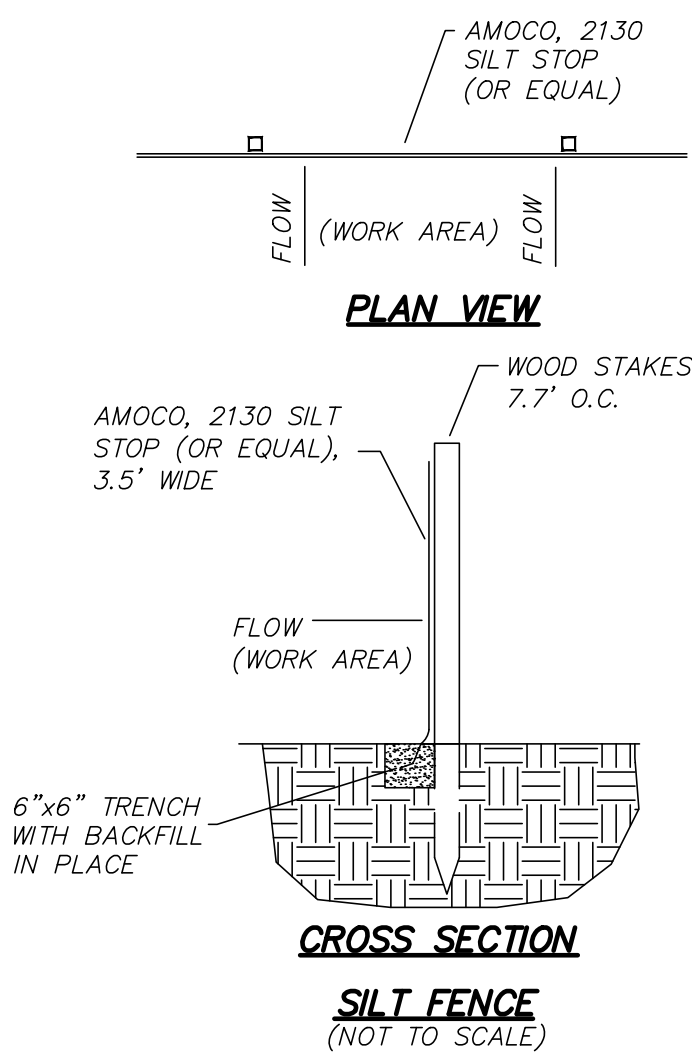
Channel Performance Design Values*			
Property	Test Method	Value	
Unvegetated Shear Stress	ASTM D 6460	2.25 lb/ft²	107.73 Pa
Unvegetated Velocity	ASTM D 6460	8.0 ft/s	2.44 m/s
Vegetated Shear Stress	NA	N/A	N/A Pa
Vegetated Velocity	NA	N/A	N/A m/s

Manning's N (Value Represents a Range) 0.029  
\*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

The values presented are for guidance purposes and do not constitute the practice of engineering. East Coast Erosion Control LLC (ECEC) warrants that at the time of manufacture, all information presented herein is accurate and reliable and fully within the ECEC manufacturing product specification parameters. If the product does not meet the stated values and ECEC is notified in writing prior to installation, the product will be replaced at no cost to the purchaser. ECEC will not be held liable for any type of damage or losses, directly or indirectly, for failure of this product. Current revision supersedes all previous versions for this product.

Revised 12/2014

**EROSION CONTROL BLANKET, OR APPROVED EQUAL**  
(NOT TO SCALE)



**PLAN VIEW**  
**CROSS SECTION**  
**SILT FENCE**  
(NOT TO SCALE)

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

**GENERAL SEQUENCE OF CONSTRUCTION:**

- CONTACT DIGSAFE (888.344.7233) AND OBTAIN CLEARANCE AT LEAST 72 HOURS BEFORE INITIATING ANY EXCAVATION.
- SITE PREPARATION SHALL BE CONDUCTED IN TWO (2) PHASES IN ORDER TO MAXIMIZE EROSION AND SEDIMENTATION CONTROL PHASE I:
  - ESTABLISH PHASE I EROSION AND SEDIMENTATION CONTROL MEASURES (HAYBALES & SILT FENCE) AS DEPICTED HEREIN AND AROUND AREAS OF DISTURBANCE AND MAINTAIN THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH LOCAL REQUIREMENTS. PERFORM INSPECTIONS, REPAIR IF NECESSARY, AND DOCUMENT AFTER EACH PRECIPITATION EVENT OF 0.25-INCHES OR GREATER.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONSTRUCT THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD AT ESTABROOK AVENUE. THE PAD SHALL CONSIST OF 1"-3" COARSE AGGREGATE WITH MINIMUM DIMENSIONS OF 50' (LENGTH) x 20' (WIDTH) x 6" (DEPTH) AND SET ON GEOTEXTILE FABRIC TO STABILIZE FOUNDATION (ESPECIALLY IMPORTANT WHERE WEETNESS IS ANTICIPATED).
  - PERFORM LIMITED CLEARING ACTIVITIES IN ORDER TO CONSTRUCT GRAVEL ACCESS DRIVE AND TURNAROUND.
  - SITE PREPARATION SHALL INCLUDE CLEARING AND REMOVAL OF EXISTING VEGETATION AND DEBRIS. ALL TREES, STUMPS, BRUSH, SHRUBS, ROOTS, GRASS, WEEDS, RUBBISH, BITUMINOUS PAVEMENT, STONES LARGER THAN 2-IN. IN THE LARGEST DIAMETER AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF FROM AREAS TO BE FILLED AND COMPACTED. AREAS OUTSIDE OF THE LIMITS OF WORK SHALL BE PROTECTED FROM DAMAGE. NO STUMPS, TREES, LIMBS, OR BRUSH SHALL BE BURIED IN ANY FILLS OR EMBANKMENTS.
  - CONSTRUCT SEDIMENTATION BASINS (SHOWN ON PLANS).
  - GRUBBING OF AREAS WITHIN THE PROPOSED FENCE AND GRADING AREAS ONLY SHALL BE CONDUCTED AFTER THE INSTALLATION OF THE SEDIMENTATION BASIN.
  - FOR AREAS WHERE NO GRADING IS PROPOSED, REPAIR UNEVEN AREAS WITHIN LIMITS OF THE SOLAR DEVELOPMENT, AS NECESSARY TO CREATE A TOLERABLE GROUND SURFACE. GENERAL TOLERANCE FOR ALLOWABLE GROUND SLOPE IS TWO FOOT VERTICAL CHANGE OVER A 20 FOOT HORIZONTAL RUN [NOTE THAT THIS REFERS TO THE ALLOWABLE LONGITUDINAL SLOPE (I.E., ALONG THE CONTOUR) AND NOT THE INCLINATION OF THE EXPOSURE (I.E., PERPENDICULAR TO THE CONTOUR)].
- UPON SIGNS OF CONCENTRATED FLOW BY EVIDENCE OF GULLYING OR RILLING IN DISTURBED AREAS, HAYBALES, OR APPROVED EQUAL, SHALL BE PLACED IN THESE AREAS, SPACED EVERY 50' IN THE UPGRADIENT SLOPE.

**PHASE II:**

- ESTABLISH PHASE II EROSION AND SEDIMENTATION CONTROL MEASURES (HAYBALES & SILT FENCE) AS DEPICTED HEREIN AND AROUND AREAS OF DISTURBANCE AND MAINTAIN THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH LOCAL REQUIREMENTS. PERFORM INSPECTIONS, REPAIR IF NECESSARY, AND DOCUMENT AFTER EACH PRECIPITATION EVENT OF 0.25-INCHES OR GREATER (PHASE I EROSION CONTROL IS TO REMAIN IN PLACE AND MAINTAINED AS DESCRIBED ABOVE).
- REPEAT STEPS 5, 6, 7, 8 AND 9 ABOVE FOR PHASE II.
- RECEIVE AND STAGE MATERIALS. RE-LOCATE COMPONENTS (E.G., CONDUIT, WIRING AND POSTS) TO SOLAR DEVELOPMENT AREA AS THEY ARE REQUIRED.
- INSTALL RACKING SYSTEM, MOUNT THE PV PANELS ON FRAME AT THE SPECIFIED ORIENTATION AND EXPOSURE (TO BE PROVIDED BY PROJECT MEP PRIOR TO CONSTRUCTION).
- RUN UNDERGROUND ELECTRICAL CONDUIT TO PV FRAMES AND INSTALL PANEL WIRING. (LOCATION TO BE PROVIDED BY PROJECT MEP PRIOR TO CONSTRUCTION)
- INSTALL PV COMBINER BOXES WITH FLEXIBLE CONNECTIONS TO CONNECT PV PANELS TO CONDUIT. (LOCATION TO BE PROVIDED BY PROJECT MEP PRIOR TO CONSTRUCTION)
- CONSTRUCT CONCRETE EQUIPMENT PADS. INSTALL AND CONNECT GROUND MOUNTED ELECTRICAL EQUIPMENT. A DISCONNECT LOCATION WILL BE ON THE OUTSIDE ON THE NARROWEST SIDE OF THE PLATFORM.
- RUN CONDUIT FROM THE CONCRETE EQUIPMENT PADS TOWARDS THE POINT OF INTERCONNECTION AS DEPICTED ON THE SITE PLAN.
- INSTALL RISER POLES AND UTILITY POLES WITH ELECTRICAL COMPONENTS AND OVERHEAD WIRING FROM THE POINT OF INTERCONNECTION TO THE ARRAY.
- CONSTRUCT ALL 7" HIGH CHAIN LINK FENCE AND GATES. (SHOWN ON PLANS)
- ALL DISTURBED AREAS SHALL BE RE-ESTABLISHED WITH "NEW ENGLAND CONSERVATION/WILDLIFE MIX" (DEPICTED HEREIN). IN THE EVENT THAT THE SEEDING FALLS OUTSIDE OF THE RECOMMENDED SEEDING DATES, DISTURBED AREAS SHALL BE RE-ESTABLISHED USING ALTERNATIVES METHODS AS APPROVED BY THE PROJECT SITE ENGINEER.
- REMOVE ANY ACCUMULATED SEDIMENT FROM THE SEDIMENTATION BASINS. THE SEDIMENTATION BASINS ARE TO BE LINED WITH RIPRAP AND REMAIN IN PLACE AFTER CONSTRUCTION.
- RE-PAVE THE BITUMINOUS CONCRETE AT THEN ENTRANCE TO THE SITE. (SHOWN ON PLANS)
- UPON COMPLETION OF CONSTRUCTION ACTIVITIES WITHIN THE LIMIT OF WORK, THE CONTRACTOR SHALL EFFECTIVELY AND PERMANENTLY STABILIZE THE SITE.

**44 ESTABROOK AVENUE**

**EROSION AND SEDIMENT CONTROL DETAILS**  
LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
(WORCESTER COUNTY)

PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**

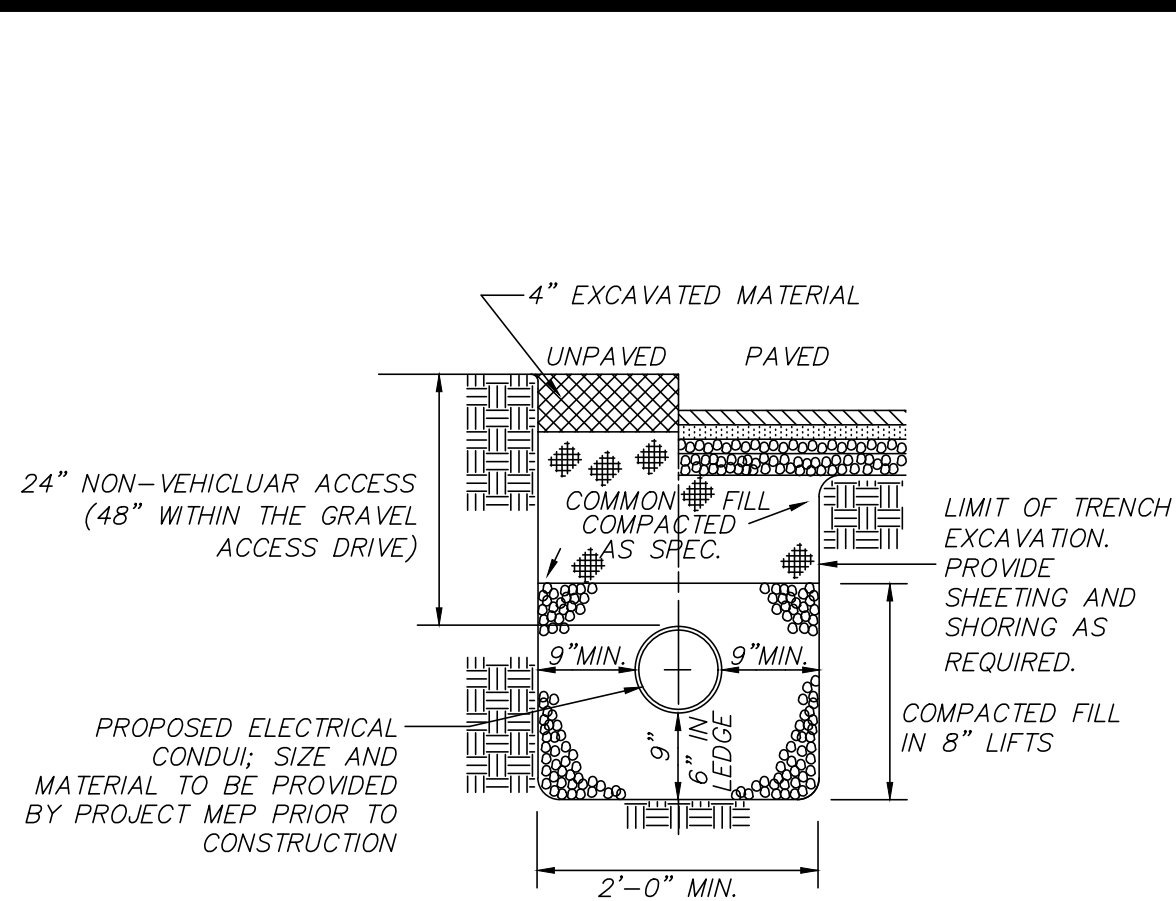
SCALE: AS NOTED DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**

500 CUMMINGS CENTER, SUITE 5950 69 MILK STREET, SUITE 302  
BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581  
TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
WWW.MERIDIANASSOC.COM

SHEET No. 13 OF 14 PROJECT No. 6108



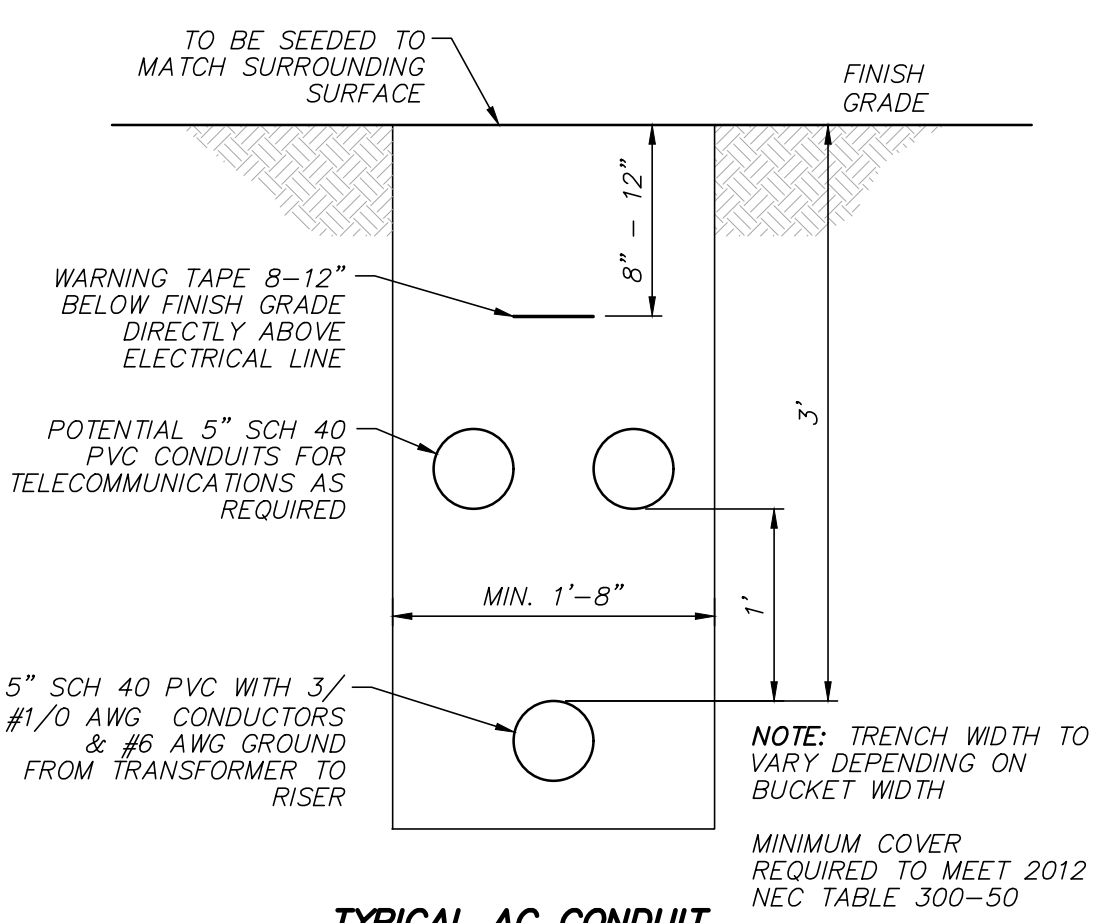


**FILL SPECIFICATION**  
 FINE AGGREGATE SHALL CONSIST OF HARD, DURABLE SAND, FINE OF CLAY, ORGANIC MATTER, SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE No. 200 SIEVE (THE FINES) SHALL BE NONPLASTIC. FINE AGGREGATE FILL SHALL CONFORM TO THE REQUIREMENTS OF THE 1988 MASS. HIGHWAY DEPT. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, SECTION M4.02.02A (2010 SUPPLEMENTAL SPECIFICATIONS). FINE AGGREGATE SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

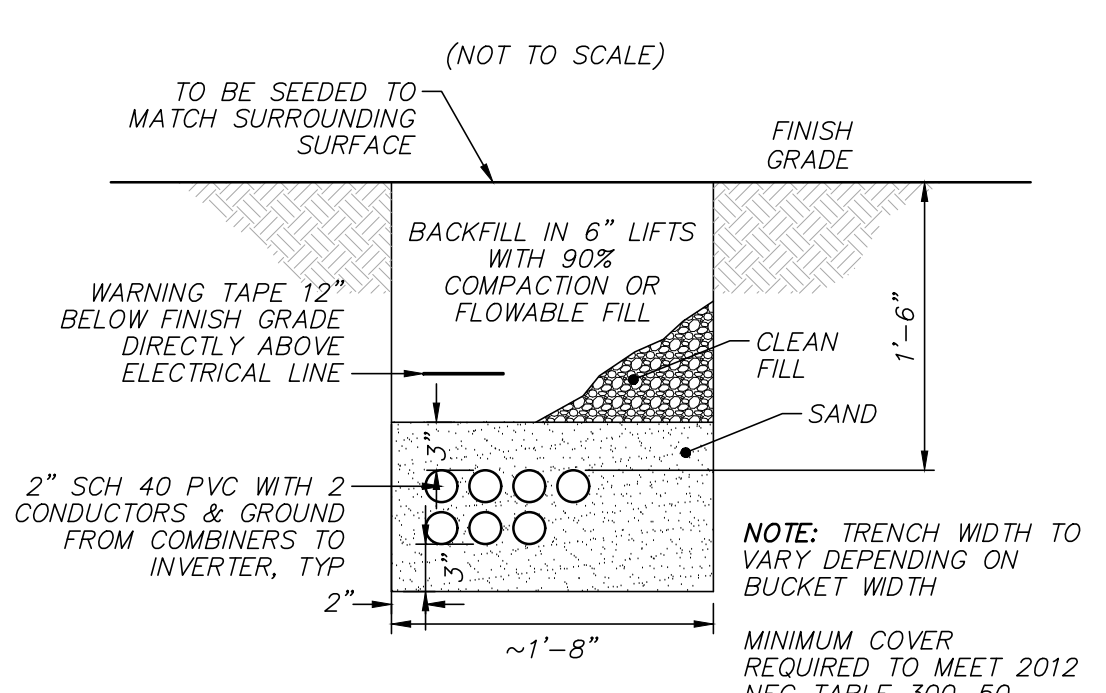
SIEVE SIZE	PERCENT PASSING BY WEIGHT
3/8 INCH	100
No. 4	95 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200 (FINES)	0 - 3

FINE AGGREGATE FILL SHALL BE COMPACTED IN MAXIMUM 9-INCH-THICK LOOSE LIFTS TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED AASHTO COMPACTION)

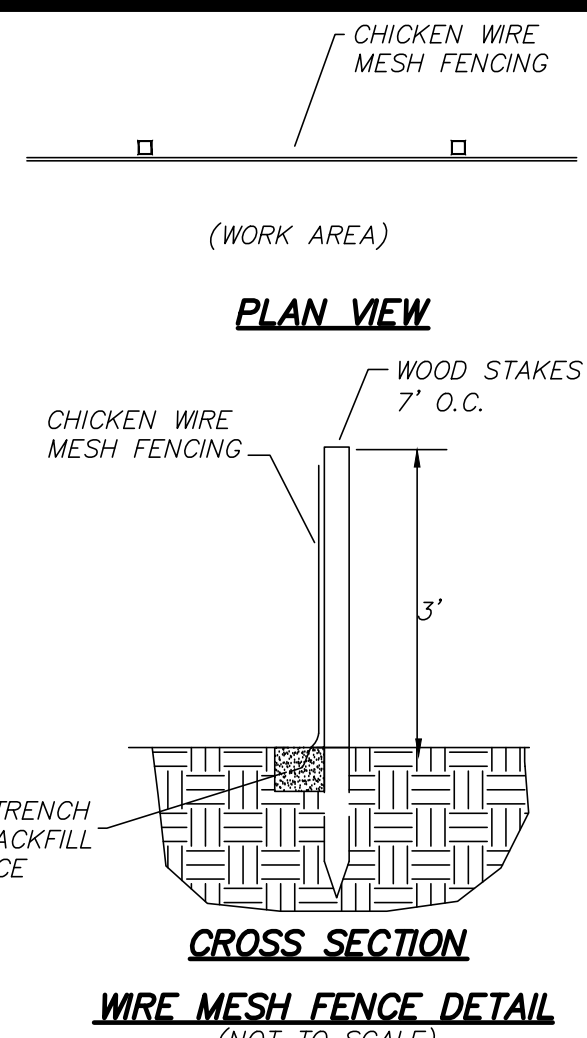
**TYPICAL CONDUIT TRENCH DETAIL**  
 (NOT TO SCALE)



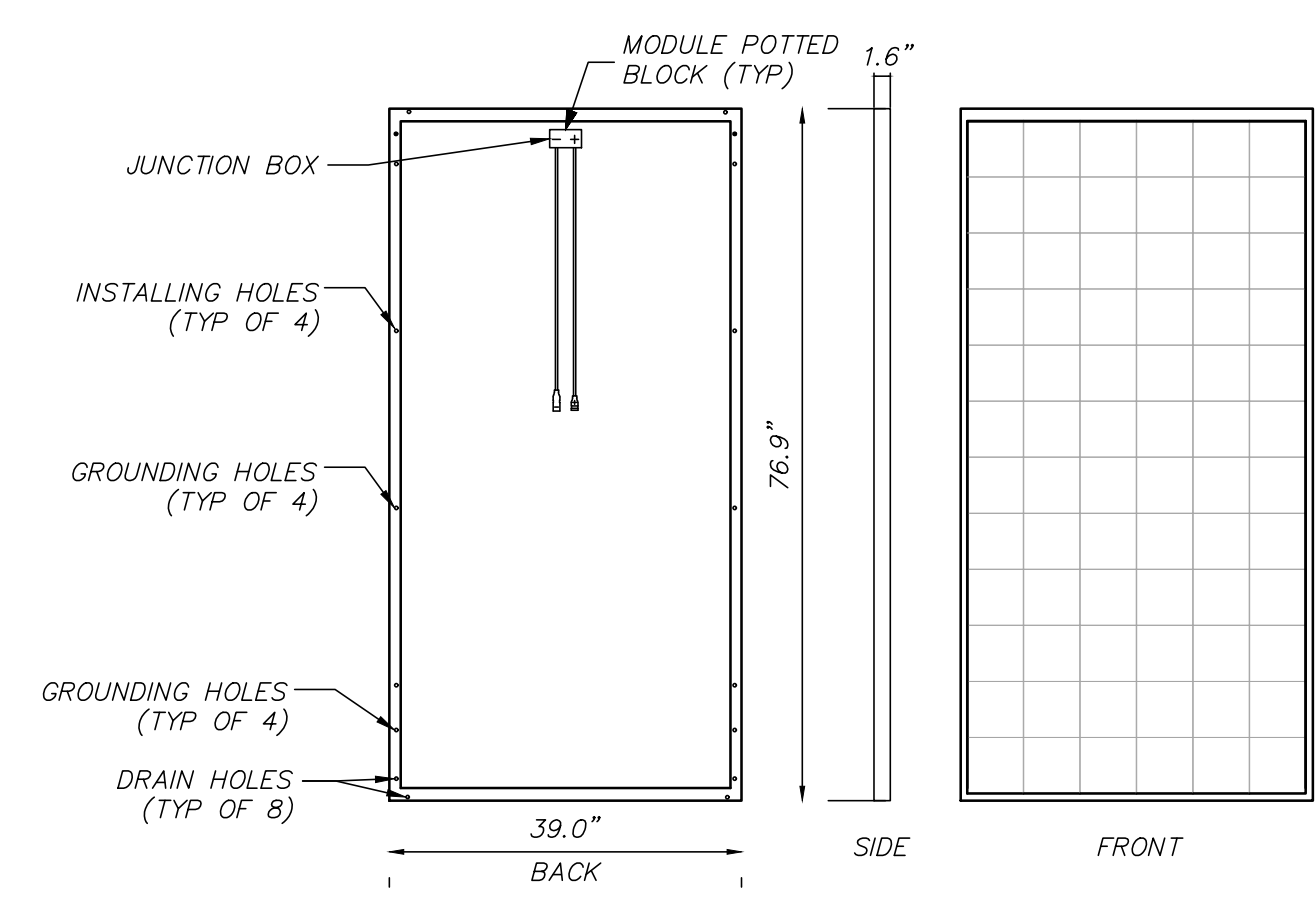
**TYPICAL AC CONDUIT TRENCH DETAIL**  
 (NOT TO SCALE)



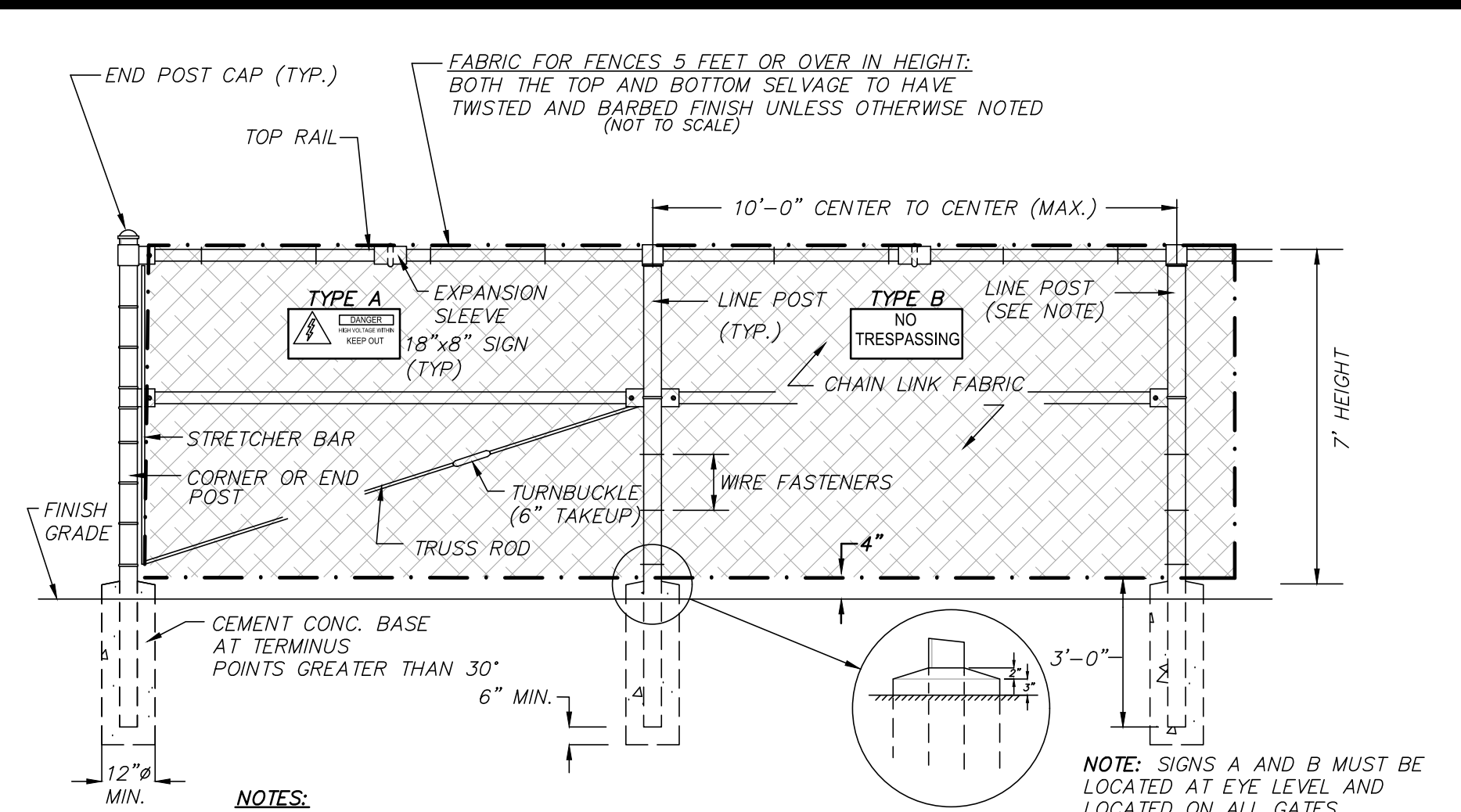
**TYPICAL DC CONDUIT TRENCH DETAIL**  
 (NOT TO SCALE)



**WIRE MESH FENCE DETAIL**  
 (NOT TO SCALE)



**TYPICAL PV MODULE OR APPROVED EQUAL**  
 (NOT TO SCALE)

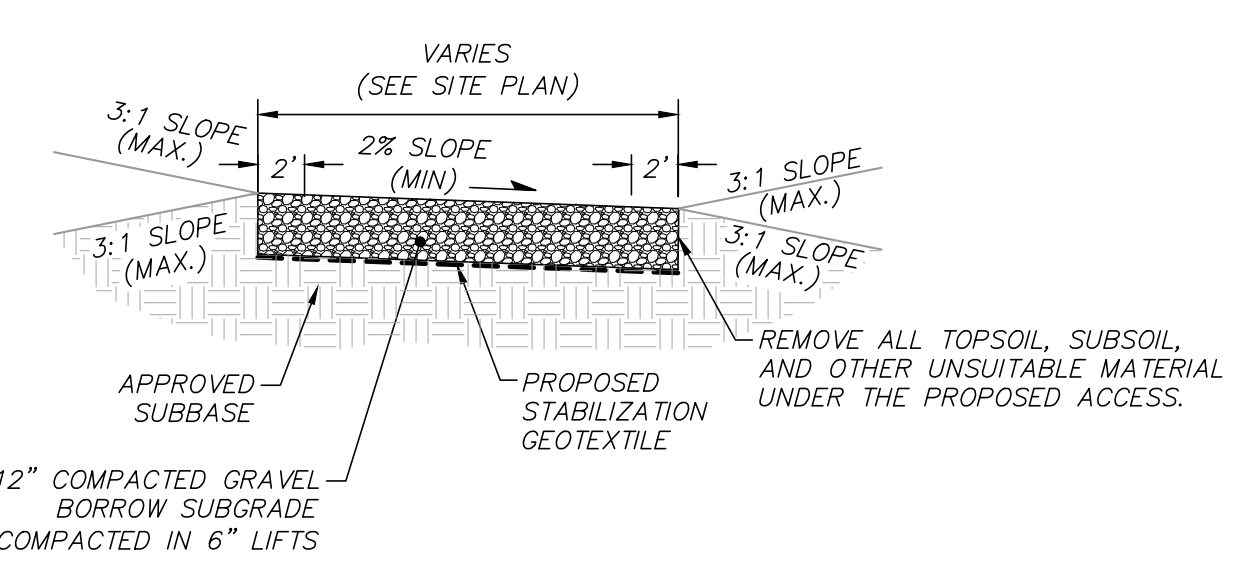


**NOTES:**  
 1. ALL FENCE MATERIALS SHALL BE HOT-DIPPED GALVANIZED  
 2. PERIMETER FENCING SHALL BE RAISED 4" OFF OF FINISHED GRADE.

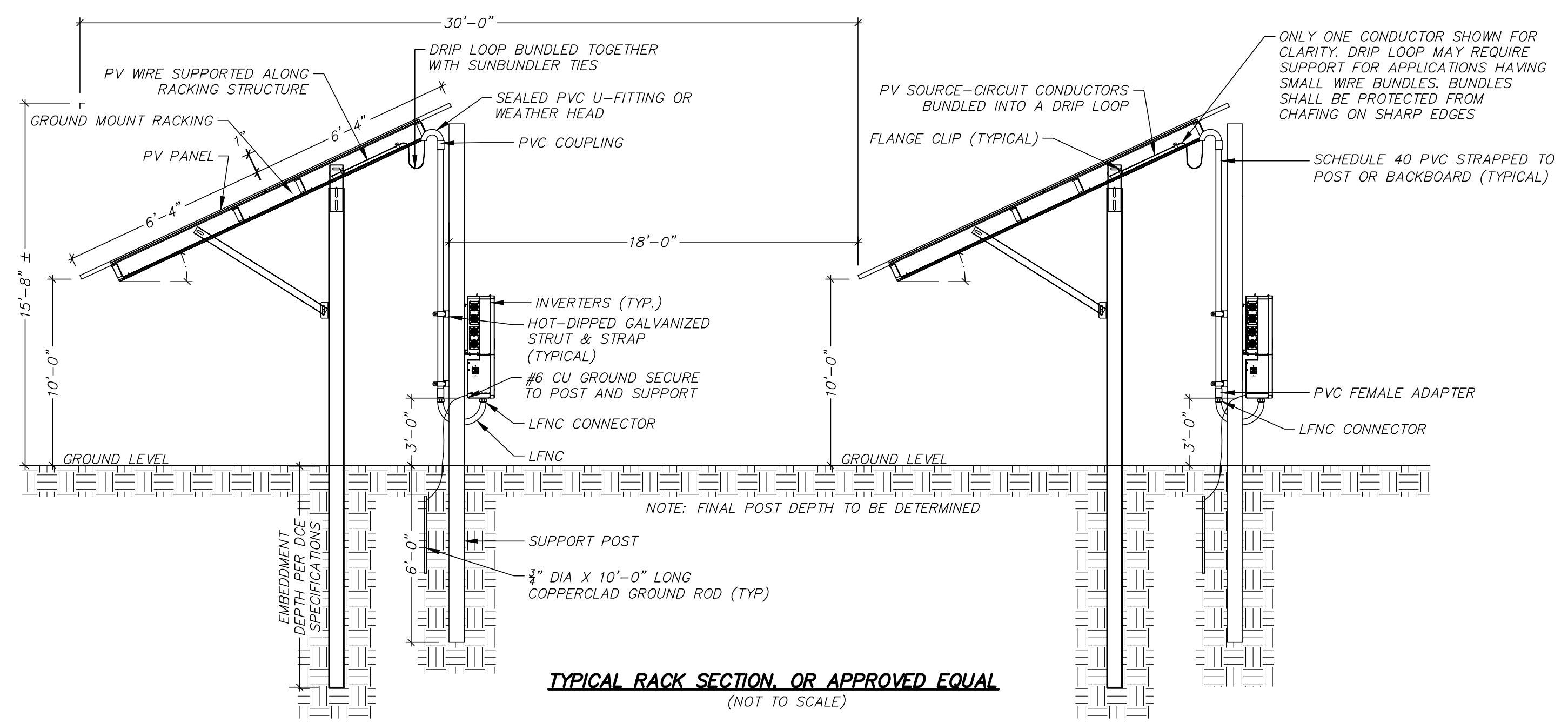
**NOTE:** SIGNS A AND B MUST BE LOCATED AT EYE LEVEL AND LOCATED ON ALL GATES. DISTANCE BETWEEN SIGNS MUST NOT EXCEED 50'.

AFFIX APPROPRIATE COMPANY OWNER NAME AND CONTACT INFO DECAL TO BOTH SIGNS A AND B.

**TYPICAL CHAIN LINK FENCE W/ TOPRAIL DETAIL OR APPROVED EQUAL**  
 (NOT TO SCALE)

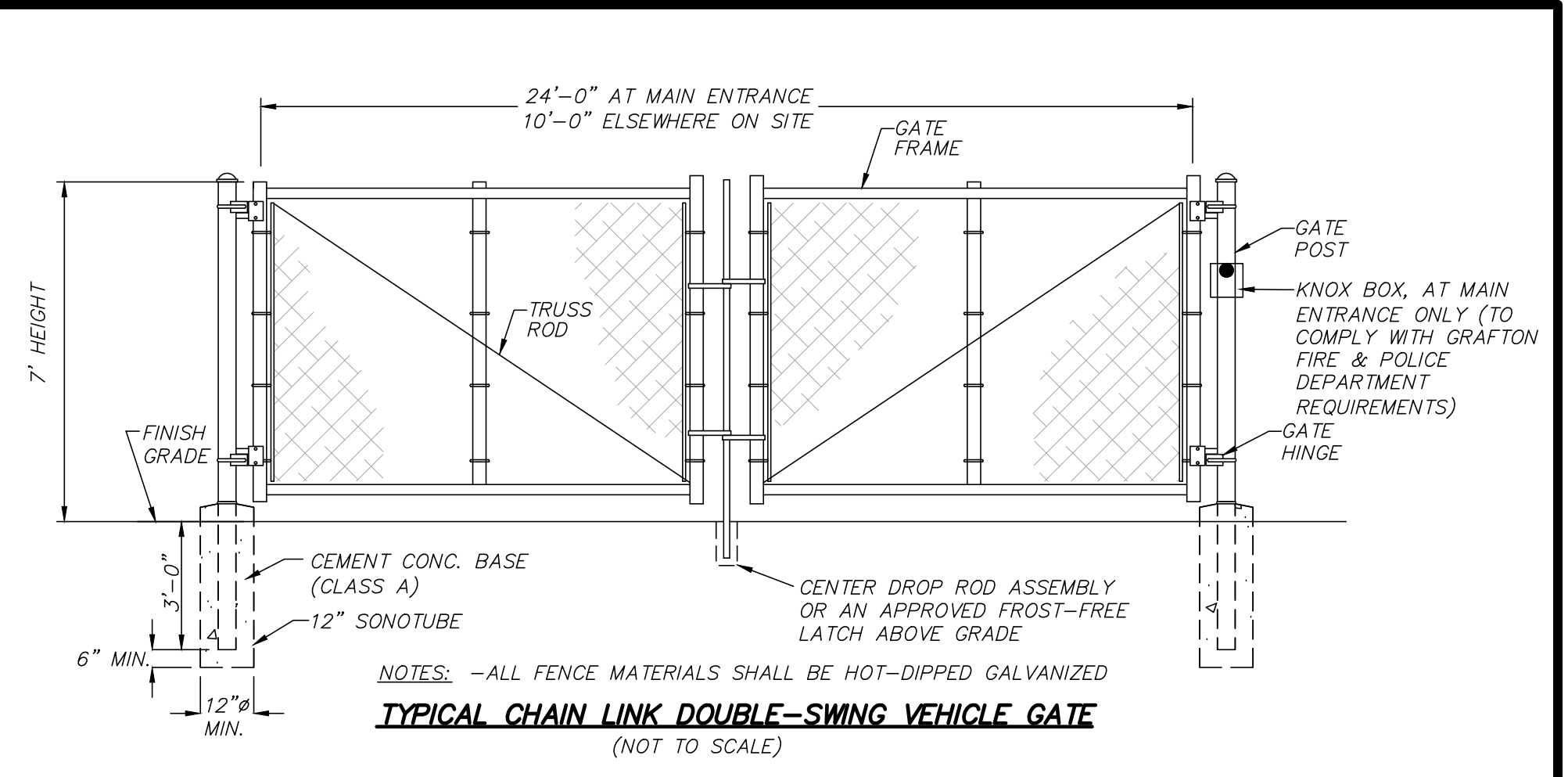


**TYPICAL GRAVEL ACCESS DRIVE CROSS SECTION**  
 (NOT TO SCALE)

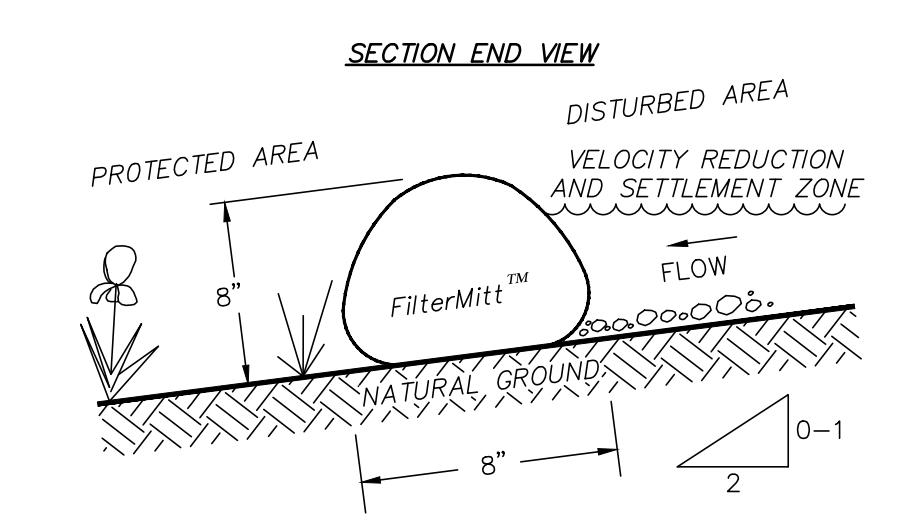


**TYPICAL RACK SECTION OR APPROVED EQUAL**  
 (NOT TO SCALE)

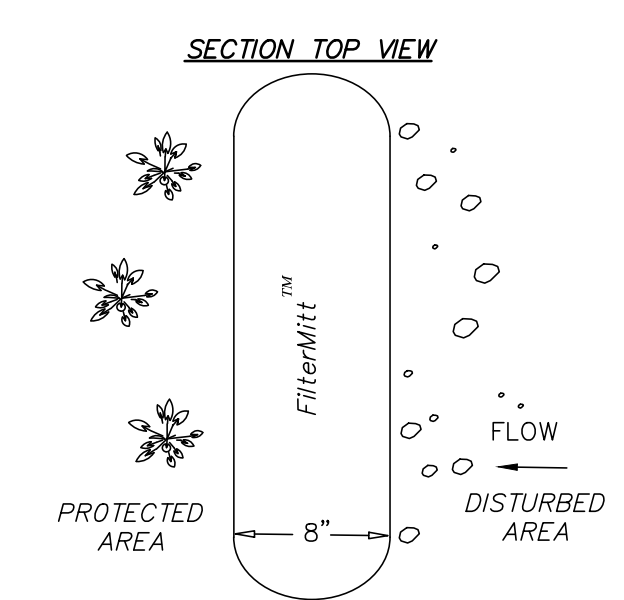
**PLANTING MAINTENANCE NOTES:**  
 LANDSCAPING SHALL BE PROPERLY MAINTAINED, ANY DEAD OR DISEASED PLANTINGS SHALL BE REPLACED IN THE NEXT IMMEDIATE SPRING OR FALL PLANTING SEASON.



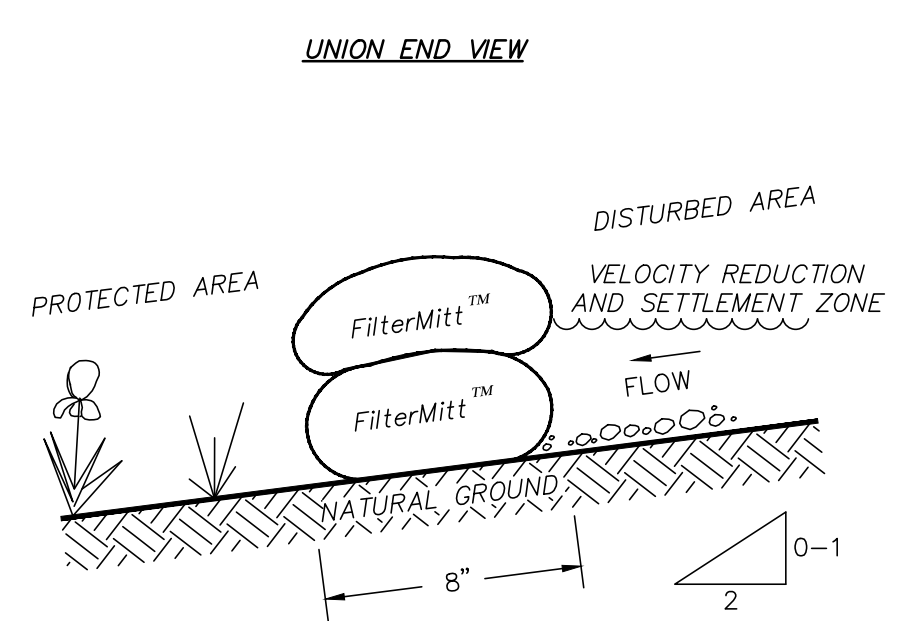
**TYPICAL CHAIN LINK DOUBLE-SWING VEHICLE GATE**  
 (NOT TO SCALE)



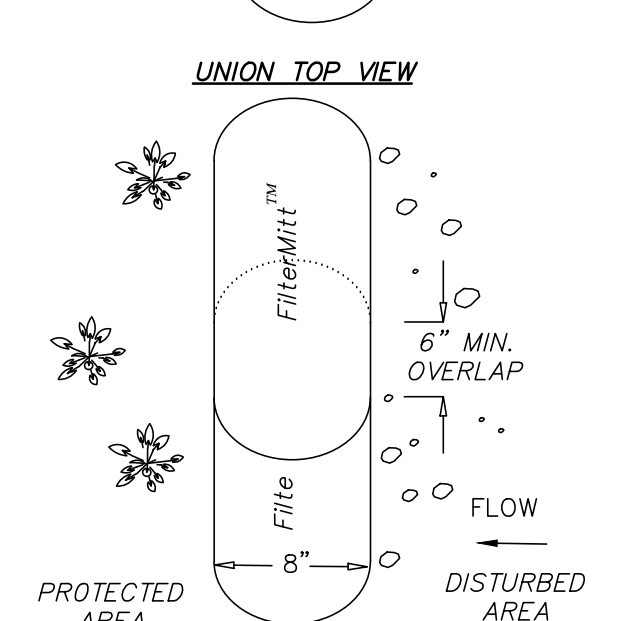
**SECTION END VIEW**



**SECTION TOP VIEW**



**UNION END VIEW**



**UNION TOP VIEW**

**FilterMitt™ COMPONENTS:**  
 OUTSIDE CASING: 100% organic hessian.  
 FILLER INGREDIENT: FiberRoot Mulch™  
 • A BLEND OF COARSE AND FINE COMPOST AND SHREDDED WOOD.  
 • PARTICLE SIZES: 100% PASSING A 3" SCREEN; 90-100% PASSING A 1" SCREEN; 70-100% PASSING A 0.75" SCREEN; 30-75% PASSING A 0.25" SCREEN.  
 • WEIGHT: APPROX. 310 LBS./CU.YD. (AVE. 11.5 LBS./L.F.)

**FilterMitt™ INSTALLATION:**  
 WITH THE NEWEST TECHNOLOGY AND EQUIPMENT, SECTIONS CAN BE CONSTRUCTED ON SITE IN LENGTHS FROM 1' TO 100'.  
 SECTIONS CAN ALSO BE DELIVERED TO THE SITE IN LENGTHS FROM 1' TO 8'.  
 THE FLEXIBILITY OF FilterMitt™ ALLOWS IT TO CONFORM TO ANY CONTOUR OR TERRAIN WHILE HOLDING A SLIGHTLY ROUND SHAPE AT 8" HIGH BY 8" WIDE.  
 WHERE SECTION ENDS MEET, THERE SHALL BE AN OVERLAP OF 6" OR GREATER.

For more information visit:  
[www.groundscapecxpress.com](http://www.groundscapecxpress.com) or  
 contact us at:  
**Groundscapes Express, Inc.**  
 P.O. Box 737  
 Wrentham, MA 02093  
 (508) 384-7140

**FILTERMITT 2:1 SLOPES OR LESS**  
 (NOT TO SCALE)

44 ESTABROOK AVENUE

**SITE DETAILS**  
 LOCATED IN  
**GRAFTON, MASSACHUSETTS**  
 (WORCESTER COUNTY)

PREPARED FOR  
**BLUEWAVE CAPITAL, LLC**  
 SCALE: AS NOTED DATE: JUNE 12, 2018

**MERIDIAN ASSOCIATES**

500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915  
 69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581  
 TELEPHONE: (978) 299-0447 TELEPHONE: (508) 871-7030  
[WWW.MERIDIANASSOC.COM](http://WWW.MERIDIANASSOC.COM)

SHEET No. 14 OF 14 PROJECT No. 6108

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CHK'D
1	08/03/18	PEER REVIEW COMMENTS	DSK	DSK

DWG. No. 6108\_DET